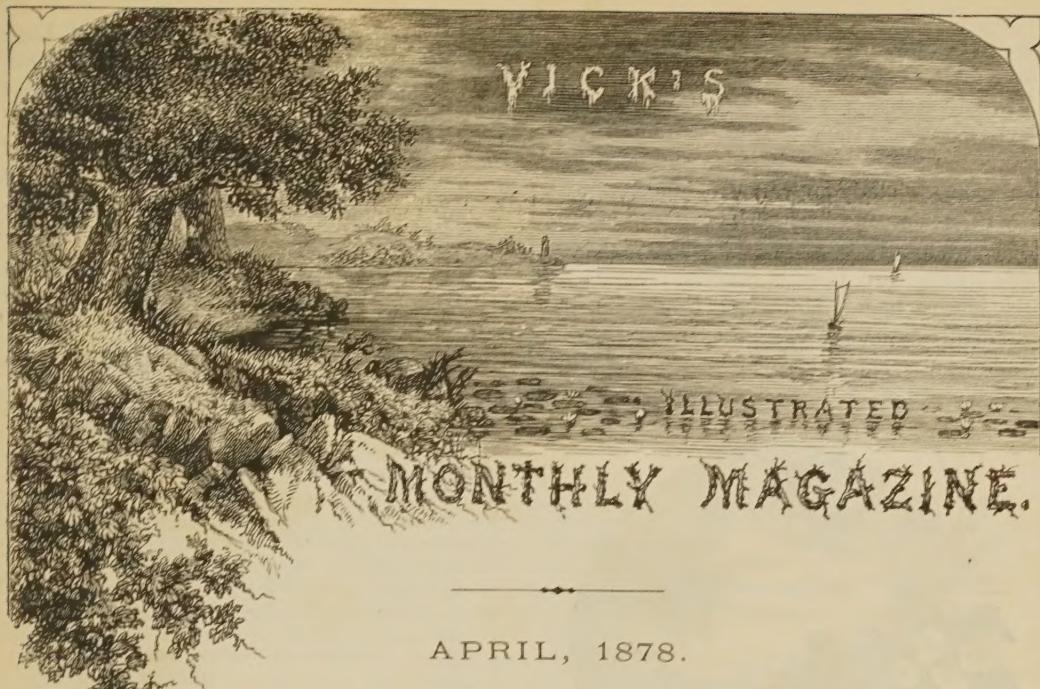


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APRIL, 1878.

THE people of this country give more time to work and less to recreation, and work more violently and recreate more unreasonably, than any other people in the world. Whatever is to be done must be done with all the might, and moderation is a word unknown in our vocabulary. We *work* as though the object of all life's labors was almost within our grasp, and that with one more earnest effort the prize would be gained; *eat* as though some unreasonable and furious conductor had just announced "ten minutes for refreshments;" and *drink* as if the sole object was to get well filled up in the least possible time.

Our recreations, designed for rest and a pleasant change, as the word *re-creation* imports, are more wearing than work. A strange rest it is to rise before dawn and hurry to an early train, or ride all night, and then rush from one scene to another, like mad men! If fortunate enough to escape railroad and steamboat disasters and run-away horses, and the usual results of ignorant and reckless boating and bathing, we return from our *recreations* weary and worn. If even an afternoon is spared from business and devoted to pleasure, a horse must be procured, and one of a 2.30 gait is quite slow enough—for who would think of a walk in the woods and fields, if a horse could be hired, begged or borrowed—so we ride at the highest possible speed that we can urge some poor animal to make, smoke furiously, and too

often drink riotously, and in this unhappy haste pass through the world at railroad speed. In our haste for riches, and in the insane pursuit of both business and pleasure, how sadly starved are the better parts of our nature! How blind do we become to every holy pleasure! How many beautiful plants that strew our pathway, budding with beauty and blooming with gladness, are passed unheeded or trodden under foot.

This eager, unceasing toil may result in wealth,—wealth earned at the expense of health—money made at the cost of head and heart—a heavy bank account and a feeble, suffering body and a starved soul—or, a sudden and fatal arrest, ere the prime of life is fairly reached, and a magnificent funeral.

Wealth does not always follow. Business reverses meet the most industrious, energetic and persevering. Hard times will come, and then instead of casting anchor in some sheltered harbor, or taking in sail and riding out the storm like the sailor in his ocean home, resting perfectly satisfied with safety without progress, we not only work harder than ever, but add worry to work; and many fall in the struggle. Often at such times the accumulations of a life are swept away. The golden harvest to secure which we had devoted the best days of life, has turned to ashes, and left nothing but a wreck—health, wealth, ambition all gone,—and mind untrained to mental pleasures. Granting, however, that life has been successful, wealth has come as the reward of toil, and old age approaches gently and kindly. The time comes when every one must retire from active busi-

ness, and then what is left but a miserable, fretful old age?

There is a better way. Every one engaged in active business should, as a restful and recuperative exercise of body and mind, pursue some work or study entirely disconnected with the business of his life, such as Horticulture, Botany, Geology, the use of the Microscope, &c. These studies truly furnish rational pleasure for every leisure hour, and when trouble or old age comes, a never-ending source of delight. "For this," remarked an old gentleman with whom we spent an hour botanizing along the

primrose and cowslip bordered hedges of England, "for means and leisure to pursue my favorite study I have labored long years, and now am happy, enjoying the fruit of life's toil." We have been in parts of the world where not only every business man, but mechanics and laboring men, almost universally seemed to be devoting their leisure time to some study, or "hobby," as it may be called. The pleasures derived from these pursuits and their power in resting the mind from the cares and disappointments of trade are pleasantly described by an old English poet.

Yet let us own that trade has much of chance ;
Not all the careful by their care advance ;
With the same parts and prospects, one a seat
Builds for himself; one finds it in the Fleet.
Then to the wealthy you will see denied
Comforts and joys that with the poor abide ;
There are who labor through the year, and yet
No more have gained than—not to be in debt ;
Who still maintain the same laborious course,
Yet pleasure hails them from some favorite source
And health, amusements, children, wife or friend
With life's dull views their consolations blend.

Nor these alone possess the lenient power
Of soothing life in the desponding hour ;
Some favorite studies, some delightful care,
The mind, with trouble and distresses, share :
And by a coin, a flower, a verse, a boat,
The stagnat spirits have been set afloat ;
They pleased at first, and then the habit grew,
Till the fond hearts no higher pleasure knew ;
Till, from all cares and other comforts freed,
The important nothing took in life the lead.

With all his phlegm, it broke a Dutchman's heart,
At a vast price, with one loved root to part ;
And toys like these fill many a British mind,
Although their hearts are found of firmer kind.



THE PERENNIAL PHLOX.

WITH pleasure we present our readers with a faithful representation of five varieties of Perennial Phlox. These were not selected because the newest or best, but because they present a good variety of color, and show what may be expected of the Perennial Phlox with ordinary treatment. Few plants give such general satisfaction, because they are quite hardy, and will pass through the severest winter without injury, and half-a-dozen, well selected, will give all the colors from white to crimson.

The flowers resemble those of the Annual Phlox, but the heads of bloom are very large, often forming immense clusters. When once established, the plants increase in size, and the roots may be divided every year or two. Plants, when in flower, are two feet or more in height. Seeds do not germinate readily unless sown as soon as ripe; but plants, cost only 25 cents, or \$2.50 a dozen. They flourish in any fair garden soil, and can be obtained either early

in the spring or in the autumn. The better class of Phloxes commence flowering soon after midsummer, and a fair collection of plants



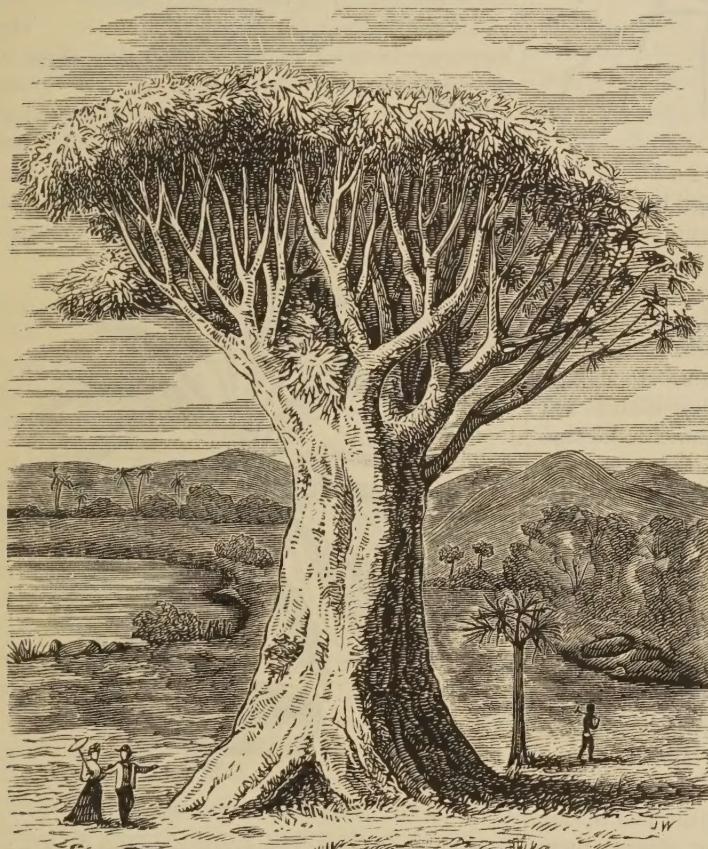
will furnish flowers quite into the autumn. The prevailing colors are white, white with colored eye, rose, pink, crimson, purple and striped.

THE DRACÆNA.

THE Dracæna is a plant more or less familiar to most of our readers. Although it has been popularly disseminated in this country but a few years, it has everywhere discovered admirers, and is steadily and rapidly becoming a deserved favorite. The species of this plant are very numerous and are found in tropical

was hollow, and in the interior was a winding stair-case, by which one might ascend as far as the part from which the branches sprang. It is affirmed by tradition that, when the island of Teneriffe was discovered in 1402, this tree was as large, and the cavity in the trunk as great, as at the time of its destruction. We are even assured that in the fifteenth Century, at the time of the conquest of the Canaries by the Normans and Spaniards, they celebrated mass on a little altar erected in this cavity. From the slow growth of the young Dragon trees in the Canaries, it has been estimated that this monster tree, before it was destroyed, was the oldest plant upon the globe. A writer, in describing it, says: "Long leaves, pointed like swords, crowned the extremities of the branches, and white panicles, which developed in autumn, threw a mantle of flowers upon this dome of verdure." The popular name of this species is Dragon's-blood Tree, because of a resinous juice of a red color which exudes from the cracks in its trunk. At one time this resin formed a considerable branch of commerce, as it was used medicinally as an astringent, but it has fallen into disuse.

The Dracænas belong to the Lily family, and they afford



THE GREAT DRAGON TREE OF TENERIFFE.

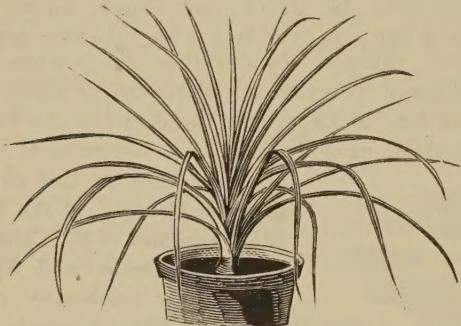
countries, and especially in the islands of the tropics. Many of them assume the proportions of trees.

The largest specimen ever known was one of *Dracæna Draco*, or the Dragon tree of Orotava in Teneriffe, one of the Canary Islands. This tree was remarkable for its monstrous dimensions and prodigious longevity. About ten years since, or in the autumn of 1867, this magnificent specimen was destroyed by a gale of wind. It was a special object of interest in the Canary Islands, and received the attention and veneration of visitors, as do the great *Sequoia* trees of California. Its trunk below the lowest branches was eighty feet in height, and ten men holding hands could scarcely encircle it; by one measurement this span around it was seventy-nine feet. The trunk

a remarkable contrast to the palms and other arborescent endogens by their branching heads. The young trees of *Dracæna Draco* do not, however, send out any branches, even in their native localities, until they are thirty years old or more. The small plants of this species, cultivated for ornament, have always a single, straight stem; but are much more robust, and quickly assume more stately proportions than those of the other kinds that will be mentioned.

The *Dracæna* is admired for its peculiar grace of form—it would be in vain in common house culture to expect flowers. To admire a plant for its well developed and graceful form, marks an advancement in refined taste beyond that which would induce one to exclaim "Oh!" at the sight of a brilliantly colored flower. Even in rearing a plant for flowers, the first object

should be to develop it to the fullest extent in size and shape and strength—to make a beautiful object of the plant itself; just as the first



DRACÆNA INDIVISA.

and main attention given to a child, for years, should be to develop and build up its physical system—in time the flowers will appear.

The Dracæna is a good house plant, a good balcony and verandah plant, good for the vase in the open air, and in a handsome pot is a fine ornament for table decoration. Its culture is of the simplest kind. Adapting itself to any ordinarily good soil, it only requires to be supplied moderately with moisture and to have a temperature ranging upwards from 65 degrees. It delights in a moist air, and whenever possible water should be kept where it will rapidly evaporate, and thus ameliorate the atmosphere in this respect for the plant. This condition, moreover, is conducive to the well-being of most plants, and no good plant-grower can disregard it with impunity. Washing the leaves and the stem of the plant frequently with a wet sponge is favorable to its health and vigor and one of the best preventives of the attacks of insects. With dust on the leaves the plants look dingy, while frequent washing keeps them bright and lustrous.

The illustrations show a few of the popular



DRACÆNA TERMINALIS.

species. *D. indivisa* has long, slender, dark green leaves, about three quarters of an inch or an inch in width, and from two and a half feet

to three feet in length, and the lower ones especially are very much recurved or gracefully drooping. This species is among the hardiest of the Dracænas, and is frequently wintered in the open ground, with some protection, in climates where the temperature frequently descends several degrees below the freezing point.

Dracæna terminalis is the most popular of the whole family in this country, and is worthy of all the admiration bestowed upon it. The leaves are broader and more erect than those of the preceding species, and of a dark green suffused with red, or having streaks of a reddish color; the young leaves nearly pink, but assuming a dark, bronzy, copper color afterwards. It is a very distinct and showy plant, and adapted to a very great variety of orna-



DRACÆNA SHEPHERDII.

mental purposes. The propagation and sale of it is rapidly increasing every year, and it is already widely disseminated. This is the Ti plant of the Sandwich Islands, cultivated there to a considerable extent for its roots, which are baked and eaten. A fermented beverage is also made from the juice, and its leaves are employed as fodder for cattle, and for clothing and other domestic purposes.

Within a few years past much attention has been given by cultivators in Great Britain and Europe to hybridizing the Dracæna and producing new varieties. The most remarkable success has attended the efforts in this direction, of Mr. BAUSE, in the establishment of Mr. WILLS, of Anerly, England. The variety is wonderful—"broad-leaved, medium-leaved and narrow-leaved; bronzy and green, crimson, rose, pink, violet and white variegations; drooping, spreading and erect habits, are blended in all sorts of combinations.

One of the sorts produced is described as "a most important acquisition, having quite the habit and character of the well-known



DRACÆNA CANNÆFOLIA.

favorite, *D. terminalis*, but with white variegation." "The ground color is a bright green, with bold, white variegation, the upper leaves being white, with here and there a bar or band of green."

Dracæna Shepherdii is of a most noble form, and is one of the finest yet in cultivation. It has long spreading leaves, of a metallic green, with stripes and border of bronzy-orange, and is a very free grower. Unlike most of the forms already known, which color most on the free young growth of vigorous plants, this plant takes on its distinctive coloring gradually on the older leaves.

D. cannaefolia is an interesting species. Its peculiarity consists in the length of the petiole, which is as long as the rest of the leaf. The blade of the leaf is elliptical in form, from fifteen to twenty inches in length, firm, and of a glaucous green.

D. congesta is a very vigorous grower, and bearing a full crown or tuft. The leaves are about twenty inches in length, slightly curved and of a dark green color. It has long been cultivated, and is considered one of the most desirable species.

Dracænas, as we have noticed before, are particularly desirable house plants, keeping in good condition for a long time, even in rooms where gas is burned—places so unsuited to most plants. These plants are liable to attacks from the Mealy Bug and the Red Spider if neglected, but the syringing and sponging advised for them will effectually prevent their gaining a foothold if frequently and thoroughly performed. After a year or two the plants begin to lose their lower leaves and to get leggy, a state of things quite undesirable, as the beauty and effectiveness of the plants depend

upon their being furnished with leaves down to the base of the stem. When the plants have become unsightly from the loss of their leaves, they can be renewed very quickly by a simple process. Cut a notch in the stem, on one side, just below the lowest good leaves, and take out a piece of the wood, then do the same on the other side of the stem, but not exactly opposite the first notch. The object is to check the flow of sap at this point and yet allow enough of it to pass to maintain the head. Having cut the notches, take some moss or sphagnum and bind about the stem, covering the incisions and fastening it on securely with twine or fine wire; the moss is to be kept gently moist, and in the course of two weeks the stem will have thrown out young roots above the notches. The head can now be severed from the stem and potted in a medium-sized pot. After keeping it a few days in the shade it can be gradually brought out into the full light, and will be found to be established.

Dracænas may also be multiplied by removing the thick, fleshy root that may usually be found in the ball of the plant. These tuberous roots can be potted, and if kept in a warm place will soon start and make new plants. When plants are re-potted a favorable opportunity is offered for taking off these roots, for the roots of the old plants are actively at work and, with the fresh soil they receive, will soon recover from any slight check they may have received.

The most rapid method of propagating this plant is by cuttings of the stem; the stem may



DRACÆNA CONGESTA.

be cut into pieces an inch in length, and these pieces split in two, and all of these bits, will root and become plants. They should be placed in a light, sandy soil, and given a brisk bottom heat of 70 or 80 degrees. They will break and start into growth in a few days.

THISTLES AND ROSES.



A bank of thistles, prickly red;
 A large and lusty burdock bed
 The dingy yard adorn;
 A clump of daisies, run to seed,
 And many a coarse, ill-favored weed,
 With broken dishes — rude indeed —
 A garden all forlorn !

TEN YEARS PASS BY. Upon the hill
 The home of man is standing still :
 But oh, how great a change !
 Poised lightly on the wooded crest,
 It fronts the sunset-painted west,
 And breaks, with outline picturesque,
 The dusky, rolling range.



Of graceful form, of mellow tone,
 The generous windows open thrown,
 Show curtains floating white :
 The porch above the sunny door,
 The ivied lattice peeping o'er,
 The rustic gate that stands before,
 More near approach invite.

The velvet lawn, well-kept, tho' small,
 Is skirted by a low, broad wall,
 Where bright nasturtiums cling ;
 Here bloom red roses, dewy wet,
 Wide beds of fragrant mignonette,
 In glowing garden richly set
 With many a lovely thing.

UPON the rugged mountain side,
 Uplifted in majestic pride,
 A squalid hovel stands,
 Of aspect rude, and harsh, and bare ;
 No fireside fancies cluster there
 Of cultured thought and tender care,
 Warm hearts and loving hands.

The shrunken boards are black with rains ;
 Old rags supply the missing panes ;
 The unhinged gate swings low,
 And loosely hangs the clincking latch :
 Beyond, a shed of roughest thatch,
 And rugged, cramped potato-patch,
 The farmer's labor show.



There purple pansies, quaint and low,
Forget-me-nots and violets grow,
Or stately lilies shine;
Geraniums, vivid white and red;
Frail, bright-hued poppies, lightly shed;
And clasping, clinging overhead,
Long wreaths of tangled vine.

A light foot treads the fragile bowers,
Two slender hands are filled with flowers,
A fair face all aglow;
A soft smile curves the rosy lips,
To round, red cheeks a dimple slips,
In liquid eyes the glad light dips,—
She loves her garden so!

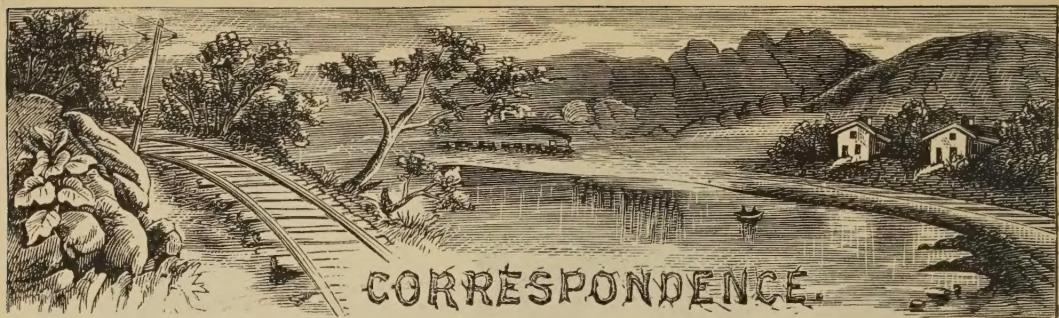
Sky Farm.

Poor hut, a blot on Nature's face,
And cottage quaint of cultured grace—
A contrast sadly wide!
And wider still 'twixt beds of bloom,
Of lustrous light or softened gloom,
And unkempt yard of scanty room,
With weeds on either side.

Yet widest 'twixt those hearts alone,
Where such pure light has never shone,
And hearts a-bloom, aglow.
O may the happier lot be ours,
To live, not with, but through our flowers,
That soothe our griefs, inspire our powers,
Because we love them so.

ELAINE GOODALE.





THE CHINESE PRIMROSE.

As winter-flowering plants for common house culture, few equal and none excel the Chinese Primrose, *Primula sinensis*. A few plants, selected with due reference to diversity of foliage and color of flowers, should be in every amateur's collection, and with anything like reasonable usage will give, from November to May, a constant succession of bloom of that peculiarly fresh and enlivening character which so distinguishes the Pansy. We are confident a much larger circle of enthusiastic and constant admirers awaits only its proper introduction, and for this purpose we proffer our service, *con amore*, in the form of a statement of what experience has taught us respecting its successful culture.

Seed and plants may be obtained of both the single and double varieties, but for beginners who are limited to ordinary house culture, we recommend *single* Primulas only, success with the florist's white and other double varieties being rarely attained outside of the conservatory and green-house, especially in inexperienced hands. A paper of mixed seed may be expected to yield a fair variety, but where a more liberal outlay can be afforded, or where a few neighbors can unite in an order, we advise the purchase of seed of the following distinct sorts:

Village Maid, pure white fringed.

Dark carmine, fern-leaved.

Fimbriata punctata elegantissima, dark velvety crimson, fringed and regularly spotted on the edge of the petals with white.

Fimbriata striata, white, fringed, striped red. Bright pink.

Pink and white striped.

Scarlet, though you must not expect it quite true to name.

The soil for Primulas in all stages of growth should be fine, light and rich, with a good proportion of sand. Prepare the pots for seed as follows: Fill a six-inch pot half full of drainage; put on this the rough siftings of the soil and press down; fill to about one and a half inches of the top with fine earth and silver sand mixed half-and-half; shake down, and

leave the surface level. Water thoroughly by setting the pot in a tub, so that it may soak up from the bottom and thus not disturb the surface. Sow immediately, and sift on enough of the fine soil and sand to leave only the upper surface of the seed in view. Cover with glass, and place in shade, where a mild, moist temperature can be maintained: no hot-bed or bottom heat is required. If the sowing is deferred to the month of June, some place in the garden, under a currant bush or other low shrub, will afford an excellent situation for the seed-pot. Should you wish strong plants for blooming in November, you may sow the seed in April, and secure the necessary conditions by putting the seed-pot in a second and larger crock, filling the space between each with dirt, which can be moistened each morning with quite hot water: the whole set over a register where the heat passes from sitting-room to the chamber, or in some place about the stove where similar conditions can be secured. If the proper temperature is maintained, little, if any watering will be required before the plants appear; but if at any time the surface begins to show dry, water gently and moderately with a fine rose, so as not to stir the soil.

In about two weeks your labor and care will be rewarded with a plantlet from about every seed. When the third true or rough leaf has appeared, prick out the plants into other pots, prepared, covered and placed as before. In about a month gradually remove the glass, and when desirable transplant into separate pots, setting them low, so as to leave room for filling in as they stretch up out of the soil—a habit peculiar to the Primulas. As soon as cool weather appears, for they are *coolish* plants decidedly, they will grow rapidly.

In the house they take kindly to a shady window, but will bear some sun, if not too intense. Avoid changing them often to positions of considerable difference in temperature, for while they will endure 35 degs. at night and 85 degs. at midday, they like to have their place assigned them and be undisturbed: they are not apt to thrive, either, when crowded

in among other plants. In watering, be liberal when in vigorous growth, but be careful at all times about wetting the foliage, and especially the buds. During the blossoming season they will bear stimulating once a week with a little tobacco tea, liquid manure, or a few drops of ammonia added to the water. If at any time the plants seem strong and healthy, but do not blossom freely, dig in a liberal quantity of sand around the roots, and try the tobacco tea. Pick off all flowers as soon as they begin to fade, and all flower-stalks when the last buds have opened.

They are not troubled with lice, nor have we ever seen them attacked with the red spider; in fact, as soon as the "wee things" once get well established, they require about the least attention of any plants in house culture. Should you, therefore, purchase your plants in early autumn, you may expect success in the culture of Primulas with very little care or labor. We do not, however, recommend this course, for to obtain the greatest amount of pleasure from them they must be children of your own breeding, each leaf the memorial of hopeful effort and patient, loving care.—CLERICAL AMATEUR.

CALIFORNIAN FLOWER NOTES.

The long, delightful rains, so full of hope and universal blessing, have done their work, and the dripping acres begin to darken to our wonderful spring-time colors, which more than compensate us for the heat and dust of our summers. Already the Columbine leaves are in close clumps up the nearest ravine; the black-stemmed Maiden-hair Ferns have got past the first hurry of uncurling, and begin to look down on the sleepy ones that come so sedately after; the Buckeye buds are getting ready to split their smooth husks, and curl them back in graceful volutes; the fuzzy Willow catkins lie thick in the eddies of the river, and drift in piles among the rocks. We are in the midst of the beginning of a wonderful new life.

To-day the first Dodecatheon flower crept up beside a mossy stone, where its circle of leaves had long rested primly, and nodded its grave approval over the grassy world, so full of sparkle and song. The first Fritillaria of the season is unfolding its brown, yellow and green cups, in a place of quietness and shade. Tomorrow I shall find a clump of Gilias, or the clear azure of the charming Nemophila, or a cluster of Larkspurs on some breezy height. Then the Leptosiphons will begin, and the wild yellow Violets dot the hills, and the scarlet Mimulus wave along the streams, and the Columbine blow her five tiny trumpets in bewitching defiance. Then our California

spring will reach her prime, and a wonderful rapture of color will flow over valley and height to the utmost verge of pines, and the borders of snow.

This month is with us the great sowing season for hardy and half-hardy seeds in the greenhouse or frame. The Jonquils, Daffodils, Crocus, Anemone, Neapolitan Violets, and a two-year-old Maurandya Vine, are in fullest bloom, as I mellow the ground, and leave Phlox, Petunia, Pansy, Lobelia, Mimulus, and a host of others, to the pleasant duty of sprouting, and myself await the pleasant moment of their re-appearance. The most intoxicating moment of the true flower-lover's existence is when the little, but precious seed, having arranged all its underground affairs, concludes to peep out and see what this peculiar, but so far friendly, world is like. Each seed, on its first appearance, has an air of mingled triumph and astonishment, as if it said: "Now, you see I could do it, but it really is a funny place you have persuaded me to enter." Then the little plant settles down to a life of hard work, and changes the peculiar dress it first had for an everyday costume, in which to worry through the cares of life—such as the making and painting of petals, the notching of leaves, and the preparing of new seeds.

One of our most useful flowers for massing, mixed borders, or for bouquets, is the lovely Delphinium formosum, which begins blooming very early, often by the last of February, and so continues until about November, if kept watered, and not allowed to seed. In old gardens, if allowed to stand, it makes very large roots, and sometimes sends up flower-spikes five or six feet. I measured once a head of blossoms from such a plant, which was eleven inches in length, but such fine spikes are rare. Our native Abronia umbellata is a charming and popular creeper, which has appeared to thrive best on a sandy surface, and blooms more freely if sprinkled occasionally with salt water, for it grows in the very spray of the ocean, and is a marked feature of our coast.

Castor Beans (*Ricinus*), Tomatoes and Nasturtiums (*Tropaeolums*), have become naturalized weeds, and hold their own without further attention. The Tomatoes degenerate, so that, after all, plants must be started, but the others, whenever wanted for the garden, may be easily found in some nook or field corner. The same can be said of several kinds of *Acacia*, and of many hardier annuals, but the choicer things all deteriorate from self-sown seed, so judicious gardeners must buy, and ought always to buy the best only.—CHARLES H. SHINN, *Niles, Cal.*, March, 1878.

FLOWERS IN TEXAS.

It has been my aim for several years to ascertain what flowers were best suited to the ever-changing climate of North Texas,—not flowering shrubs and Roses, for these grow everywhere—but such as are raised from seed. In these experiments I have tried every variety of seed offered in VICK'S CATALOGUE, and many other kinds beside; and out of all these there are, alas! so few I can recommend as suitable to withstand the long, hot (and sometimes dry) summer. Yet it is very desirable to have just such plants; hence my experiments.

The blooming season extends from the first of April until frost—generally about November 1st. Seven months of continual blooming! What plants can stand that? Well, the Petunia can and never complain, and it hasn't an equal. The Phlox, Verbena, Snapdragon, Dianthus, Lantana and Eschscholtzia will also stand it, if not allowed to make seed, or get too dry. And there my list ends. There are many others we cannot dispense with entirely, but a permanent place cannot be awarded them, for when summer comes in earnest they die,—such as the Balsam, Delphinium, Salvia, Scabiosa, etc. The Aster and Stocks will not do well with me, and the Amaranths lose their color directly. For Vines the Momordica Balsamina far surpasses anything; the Cypress and Madeira being very good, however. For tall plants for screens the Ricinus and Canna are perfectly reliable, the latter growing eight feet high with me last season, and flowering continually. Then there is another list of plants which, if sown in the fall, will grow all winter and flower beautifully in the spring: such as Pansies, Nemophila, Convolvulus minor, Poppy, and doubtless many others. In mild winters volunteer plants of the Phlox stand over, and bloom better than those sown in the spring.

I find the winter here very hard on plants. The cold is not so severe, but the plant enjoys a summer day temperature one day, and is frozen stiff the next. This is very trying on them; so much so that many plants considered hardy at the North are very doubtful here. For this reason, combined with the enfeebling, long summer, I find the Perennials the most unreliable of all. The Hollyhock and Dianthus are equal to the emergency, and the Ipomopsis, being native, will, of course, feel at home, but with all others my success has been on the wrong side. I begin sowing seed in January, and have large plants to set out in March. These early sown plants get a good start, and send down roots to the ever moist clay before summer comes, and do much better than those sown in the open ground.

Of bulbs, the Hyacinth commences to bloom about the latter part of February, and does well in every respect. I have heard some complaint that Tulips do not do well in the South, but my experience has been different. From one hundred bulbs planted in 1875, last spring I took up three pecks. Lilies are unreliable, and Crocus will not bloom after one year. Gladiolus do excellently if planted in the fall. If others have experience that will be of assistance to me, I should be pleased to hear from them.—DICK HOPSON, *Sherman, Texas.*

NEW STRAWBERRIES.

HOW TO GET A LARGE STOCK OF PLANTS FROM A FEW.

Although the "Strawberry fever" has very materially abated, yet there are many enthusiastic growers, who, having faith that a *perfect* strawberry can be produced, grow numbers of seedlings every year, each hoping that he may be the fortunate one who will give to the world a variety combining *every* good quality. Experience would seem to have demonstrated this to be an impossibility, for growers find that when in a seedling they have secured some desired quality, it proves deficient in some others, even those which may have been possessed by the parents. These experiments, however, have produced wonderful results in the improvement of this popular fruit, and quite a business is done by nurserymen and gardeners in growing and selling plants of the new varieties. Many are deterred from purchasing and testing new varieties by the seeming high prices at which the plants are sold, but with pains-taking and care planters can get up a *stock* of plants at a comparative small cost. My plan is to prepare my beds eight feet wide, and long enough to contain the plants set in a single row six feet apart along the center of each bed. By thorough manuring, plowing and harrowing, I keep the ground well stirred until the runners start, when the bed is raked level, and as fast as the runners come forth they are trained to grow in every direction, and when the joints appear small stones or lumps of earth are placed at each joint to hold the runner in place, and aid the young plants just forming at the joints to become rooted *early*, so that they may also send out runners and form plants. By this plan, and continuing at intervals of one week or so during the growing season, a stock of from two thousand to four thousand plants, according to thriftiness of the variety, may be grown from a single dozen, and those first rooted will be very strong and suitable for early fall transplanting, with balls of earth attached for stool cultivation and will bear an abundant crop of fruit the following season.—SUFFOLK.

THE WATERING-POT.

What a nice, handy, convenient thing this implement of the garden is; it will splash water either in one solid stream, or spread it around as fine as dew, if the proper person handles it, along with the proper "rose." But how often the proper person is connected with the proper thing in life, is something to puzzle a philosopher. I have even seen the best intentioned people connected with the watering-pot, who ought to be confined with the implement in some place where they could not hurt or moisten anything but themselves. The question is not unfrequently asked of the gardener, "How often do you water your plants?" as if plants were pieces of machinery, and that old mother Nature, who grows plants on a pretty large scale, had been in the habit of watering her pets by the clock. True, Nature is a first-rate plant-grower and uses plenty of water, in fact grows many of them in water alone, save the numerous little animalcules that are found within the globules of that fluid and of which many plants find a nice tender-loin, or an oyster supper.

A plant-grower should learn that it does not always rain in torrents, or that rain is not always drenching; and also that all plants are not found growing in places where they are wet at the roots for a long time together. Many ladies who have a penchant for plants will mechanically soak every plant they have, not knowing that many of those same plants are left for weeks and sometimes months together in a pretty dry state by Nature, who contents herself with washing their faces with dew on putting them to bed at night. Plant-growers should learn whether in a state of nature their plants grow in a swamp, a lake, a running stream, on dry land, on high lands or in valleys, or under the shade of other plants, or if exposed to drying winds or strong sunshine; and if they follow the lessons Nature teaches, they will surely grow plants well.

It is useless to think that all plants are "Calla Lilies," which, by the way, is not a lily at all, for it has not six petals and six stamens in its flowers, as true lilies have. A Cabbage or Cauliflower, or any of their kindred, like water, but even they will sicken of it; they are found in a wild state near the influence of the tides of the sea, but they are comparatively dry twice in the twenty-four hours of a day. They grow upon the shores of the sea and not in the water. The Camellia Japonica comes from the woods of Japan and northern China, and should therefore have shade, and never be exposed to drying winds or hot sunshine. The Azaleas and Rhododendrons are found upon mountain

slopes where they never get very hot sunshine, and have about them that constant moisture peculiar to a mountainous district; yet it is not a stagnant moisture, for the nature of the land keeps the water in the earth in constant motion, and therefore sweet. Yet how often do we see people put such plants in the most exposed places they can find. If out of doors, they will be found in some windy, exposed place, where the very life of the plants is dried out of them, and often in a few hours; or if indoors, they will be exposed to the dry air of a furnace or stove, and placed where the sun can shine upon them with all the heat that plate glass can make in a room. The Camellia and other plants like it are not difficult to grow well, either in doors or out, but we cannot ignore Nature's laws.

A sponge or two hung in a Rhododendron or Camellia, if filled with water once a day, will keep up a constant supply of moisture for the branches and leaves; but at the same time the plants must be screened from the hot sunshine, dust and drying heat. "But how are we to do it in a room?" many will ask. The answer is as simple as A B C. If you will have such plants, make a light muslin screen for your plant to cover it all over. Ornament it all you like, but let the plant have that subdued light it would get in its native dells or on its native mountains; but don't be everlasting watering at the root, until it becomes sickened, or what gardeners call "soured." Wash their faces every evening, even if you have to "spray" them with your mouth, but seventy-five cents will buy a tin sprayer, from a florist. The Geranium is not too fond of water unless growing in a hot, sandy place, or in a hot, dry room; and even then it will show that it has had too much water by its leaves turning a sickly yellow hue. If this or any other plant shows signs of being soured, it is best to let the watering-pot rest awhile, and if the plant is in a pot or tub put a few hot bricks under it, so that it may, so to speak, get its feet warm; or, if in the green-house stand it over the hot-water pipes, or flues until it dries off, and when it begins to grow again give it a shift, if possible, into fresh soil. A Fuschia loves moisture, but it will drop both leaves and flowers if it is kept in constantly wet and sour soil.

This business of watering plants is one of the most important in plant culture, and first-class florists seldom intrust it to either careless or green hands. A man who would be good among Callas, Stevias and similar plants, would be a murderer of Roses, Geraniums, Camellias, Azaleas, and even of many of the Fern tribe and Orchids.—AN OLD GARDENER.

GLADIOLUS FROM SEED.

Having been successful in raising the Gladiolus from seed, I will describe my way. I make my bed the first of April in the following manner: I make a frame about eight inches larger each way than my seed-bed is to be. This frame is put on the ground where it will be protected from cold winds, and will be in a little shade during the middle of the day. Mine is under an old pear tree. In this frame I place manure that has been prepared the same as for a hot-bed, treading it down until the frame is full; on this I place another frame eight inches smaller each way than the other, and made sloping toward the South or Southeast, to receive a sash, like a hot-bed. The frame is about five inches high in front, and eight or nine inches at the back, and about three feet square. In this frame I place rich sifted soil, about three and a half inches deep, and press it down level with a board, and then sow the Gladiolus seed quite thick. After sowing, I sift on fine soil, just enough to cover the seed, and water through a fine rose, a little at a time, until the soil is wet through, and then put on the sash. A little air is given during warm days by tilting the sash at the back, half an inch or so, according to the heat, until the plants commence to come up pretty well, and then put them in the window in a warm room, where they can have the light, but not the hot sun at first, and remove the glass from the box. Gradually the box is brought out into the bright sunshine as the plants are able to bear it. When the plants are large enough, and before they become too much crowded, they are transplanted into other boxes about an inch apart. — J. W. C., *Rockville, Mass.*

FLOWERS IN NORTH MISSISSIPPI.

The traveler arriving in this section of country in winter observes in the landscape a sombre uniformity of hue, unrelieved by any tints of green, except the occasional clumps of Holly and the patches of Mistletoe growing high up in the tall trees. There is a look of intense dreariness in the stretches of mud-colored fields, the sere, brown woods, and the dark, owlish swamps,—no gray moss banners, no Magnolias, as in South Carolina, and no green Pines to give a touch of variety to Nature's face in syncope. But all this changes when March winds come to whistle through the cracks and crevices of our open houses; now moaning like organ dirges, now whispering of old dreams, or buried hopes, or memories well-nigh dead. Like mighty conquerors they sweep away the debris of the fallen year, and trumpet

the coming of spring with loud blasts "That plant her standard firmly on King Winter's bleak domain." Dearly do I love the sweet smiling landscapes evoked by this great re-invigorator; the varied hues she gives to leaf and flower; the differing notes with which she speaks through voice of bird and insect.

The face of the forest in the opening spring is powdered with Dogwood blossoms, white as snow flakes. The tints of the young leaves have a vivid delicacy peculiar to the newly-born. From the cover of their leafy hoods peep sweet wood Violets, reminding one of the blue eyes of a German Fraulein,

In the corners of the fences
Slid the little daisy-spies,
Peeping shyly through the bushes,
Full of childish, glad surprise.

Wherever a streamlet trickles the moss has a new velvet nap, through which spring long Ferns, bending gracefully towards the water. I put my hand down, and with a stick turn up some of the dark earth: it is a heavy, rich loam, with clay subsoil, and sandy spots are confined to the ridges that have been cultivated for years.

This soil of North Mississippi is well adapted to the raising of bulbs. The growth of Hyacinths here is something remarkable. Once put a few bulbs in the ground, and with but little cultivation they will duplicate themselves year after year, not deteriorating, but coming double every time. I have seen them growing in gardens hereabout, showing great spikes of clear lemon, deep rose and pure white flowers. The bulbs begin putting up the last of November, and by Christmas we can gather button-hole bouquets of the lovely little white Roman Hyacinths, which will bloom out of doors when the ground is covered with snow. Somewhat later, Crocuses come up; then double Hyacinths and Jonquils; and by March, Tulips. With April we have a variety—Star of Bethlehem, Spiraea, Pomegranate, Flowering Almond, and flame-colored *Pyrus Japonica*.

The winter climate here is inconstant and fluctuating to the last degree, changing with slight premonition, from a freezing temperature to a debilitating mildness. There is always a heavy rainfall from November to March, and the muddiness and absence of color in the landscape alone distinguishes our winters, occasionally, from what we associate with the time of the vernal equinox. Again, however, as in the winter of 1876-77, we have a succession of heavy snows and severe freezes. People who build hot-houses or conservatories, or even dry pits, for their house plants, have no difficulty in keeping them the winter through; but it is almost impossible to preserve them from frost.

bite in our houses—our best plastered dwellings being draughty, and not kept up to anything like evenness of temperature. But, happily, the winter, even if unusually hard, passes quickly; and soon "slender-footed May" is here, "With its slight fingers full of leaves and flowers," wearing "silver sandals dipped in dew," rosy gloves, and blushing deeply among her poet loves. Canterbury Bells and Pansies, Sweet Rocket and Candytuft, bloom all together, and crimson Poppies bend their heads, as Clytie did hers in the Greek sculptor's thought. The Fleur-de-lis or Tyrian-dyed Iris recalls the banner of France, unsheathing its tricolor in forest as well as cultured garden. By the middle of May,

"The winds blow sweet
Among our Paestum roses; bright and fleet
The finches sing and flit."

Under the fresh delightful Lilacs are masses of spicy Pinks, and soon the Balsams, Salvias, Phlox, Petunias and Verbenas, brighten their beds with every shade of color. In the thicket there is a smell of tender Grape flowers, which will swell into luscious Muscadines in the autumn, enchanting us with odors like those of Araby the blest. Our favorite garden climbers are Japan and Chinese Honeysuckles, Madeira Vine, Purple Bean, Morning Glory, and Lamarque Rose and Cypress Vine. In the woods in summer and fall, with graceful tendrils draping dead trees, is the Cow-itch Vine, bearing blossoms shaped like the Mimulus (Monkey Flower) of the richest flame color, with orange throat, and dark-colored stamens—a magnificent treacherous beauty, poisoning the flesh of all who touch it.

Your Gladiolus and Tuberose bulbs do splendidly here. The latter blooms out of doors till November. Our flower gardens, like our woods, are glorious in the fall; full of

"Bright lingering Roses,
And Asters white as snow."

As for Chrysanthemums, sweet faithful things, they may well be chosen as emblems of truth and constancy—evergreen we may say (new leaves putting up by the time the old ones are withered,) and giving such abundant and varied bloom, till killing frosts blight even their hardihood. Zinnias, and Marigolds and Balsams keep them company, while "mailed Nasturtiums shine" till blackened by Jack Frost.

As Evergreens in gardens sheltered by other trees, we have the Norway Spruce, the Juniper, Cedar of Olivet, Pine, Arbor Vitæ and Magnolia, but these are all of stunted growth compared with the stately altitude they attain in their native forests. Autumn puts spots of gold on the foliage of the Swamp Poplar, col-

ors the Sweet-gums crimson, and makes the Sumach look on fire. If, as Chautaubriand declares, "The whole universe may be considered the imagination of the Deity made visible," we may with equal propriety discover its manifestations in the adornment of the earth with flowers, as we discern the shimmer of the diamonds in His girdle among the stars, and with worshipful eyes behold Him make

"An awful Rose of Dawn."

—MRS. V. D. C., Hernando, Miss.

JEAN DE LA QUINTINIE.

The first horticulturist who laid down fixed and scientific principles of the art of pruning fruit trees, bore the above name. He was born at Poictiers, France, in the year 1626. Not only eminent as a horticulturist and naturalist, he acquired a fine reputation as a lawyer; but his fondness for agricultural pursuits caused him to abandon the legal profession for one more in accordance with his love of nature. He finally devoted himself to Horticulture, and made several important discoveries concerning the culture and nature of plants. Gardening became one of the fine arts, under his scientific researches into the secrets of mother Earth and her beautiful kingdom of growing things. It was Quintinie who first discovered that a transplanted tree grows only by the new roots it throws out, and recommended that the old fibres be cut off and the tree be shortened back accordingly. Charles II offered him a pension to engage in his service, but *La belle France* was too dear unto him for a change of home. Louis XIV highly estimated his worth, and appointed him to fill a position with the title of "Director General of the Royal Gardens."

The best known of his works are, "A Treatise on the Culture of Melons," and "Instructions pour les Jardins Fruitiers et Potages." The latter has been published in several editions, and is, I think, the same work with a different title of "Parfait Jardinier." Quintinie died in the city of his beloved Royal Gardens one hundred and seventy-seven years ago, but is still one of the standard authorities upon Horticulture and kindred subjects.—JENDWINE, Greenville, Ala.

JAPAN PEA.—Do you know of any market for Japan Peas? I do not know of any use for them except to make coffee, and if they are not worth more for that than Canada Peas it will not pay to raise them.—J. M. W., Ridgeway, N. Y.

[We don't know of any good use to which Japan Peas can be put. Like many things, they received a good deal of unmerited puffing.]



FOREIGN NOTES.

PERFUME OF THE ROSE.

THE Rose gives the sweetest, the most lovely and loved perfume. As the Rose is the Queen of Flowers so is its fragrance the Queen of Perfumes. Dr. PIESSE, whose thorough knowledge of the subject well qualifies him for the task, has recently published in *The Garden*, of London, an article showing the way in which the perfume is extracted from the Rose, and preserved in the form of *Otto of Roses* and other costly Rose perfumes. This is reliable, and therefore valuable, especially as it corrects many foolish and incorrect statements on this subject. It is also particularly interesting at this time, treating, as it does, of the Rose fields of Roumelia, so recently desolated by fire and sword.

Its breath

Is rich beyond the rest, and when it dies

It doth bequeath a charm to sweeten death.

There are two methods of obtaining scent from the Rose, both operations being carried to a considerable extent. In Roumelia the flowers are distilled for the purpose of obtaining the Attar or Otto of Roses. In the south of France the *enfleurage* process is adopted, which yields a spirituous scent of the Rose. The principal Rose farms on which the distilling process is adopted are situated in the valley of Kezanlik, in Roumelia, at the foot of the Balkan Mountains; the principal town, Kezanlik, bears the same name as the province, and can now easily be picked out in the war maps of the day. The province of Kezanlik extends for about forty miles east to west, and is watered principally by the River Thunga. It contains many small villages, the peasants of which are employed in the culture of the Rose. The only Rose cultivated for its scent, both in Roumelia and in France, is the Provence or Cabbage Rose. It can be planted either in spring or in autumn. On Messrs. COLLAS & CHRISTOFF's farm, where Roses are grown, parallel furrows are cut at distances of five feet apart, four inches deep, and the same in width; into these furrows shoots from the old Rose bushes are laid, not

cut, but so broken off as to have a portion of the old root attached to them; these are then covered up with earth and a little manure; if water be near, the furrows are inundated, otherwise the grower trusts to what may fall in the shape of rain. In six months young shoots appear which are then earthed up. During the first year they make about four feet of wood; the second year a few flowers are produced; but a crop is only secured in the third year; the plants then begin to have the aspect of thickets, which soon become perfect hedges six feet high; and which will bloom well for fifteen years. During this period dead wood is cut out, but the bushes are not pruned in the ordinary sense of the word. The Balkan Mountains keep off in a great measure north and west winds; nevertheless, in spring the Roses often sustain great injury from these and frost.

As a rule, the Rose harvest begins in the middle of May, and consequently this is the time for distilling, an operation which lasts for, say twenty-five days. Supposing a plantation to produce in one season 50,000 lbs. of flowers, there must be garnered and distilled 2,000 lbs. each day. The flowers are gathered before sunrise, and are distilled by noon of the same day. As seasons differ, so do the crops and the quantity of Otto produced. The amount of Otto is greatest when the temperature at the time of distilling is low, and *vice versa*. When the weather is warm there is an abundance of bloom, but the yield of Otto is less; favorable weather is, therefore, better than large crops of blossom. The still is a copper vessel or boiler, known as the alembic, broad at the base, and becoming narrower towards the top, on which is fitted the dome or neck to which is attached the condensing pipe. Water and Roses are put into the alembic, then a fire is lighted under it, and when the water boils the steam generated carries forward the Attar from the Roses into the refrigerator; the Otto floats on the condensed water, and is thus collected. On an average it requires 3,000 lbs. of blossom to produce 1 lb. of Otto—say 16 oz., Otto of

Roses always being sold by the ounce, which in Turkey is somewhat more than the English ounce.

BARING, in his report on the exports of Roumelia, recently published by order of the Government, says:—"One of the chief manufactures is that of Attar of Roses, the



THE CABBAGE ROSE (ROSA CENTIFOLIA.)

average annual amount produced being 800,000 'Mescals' of about $1\frac{1}{2}$ dram each, at about 16 piculs the mescal, and the whole is exported to England, &c."

MODES OF OBTAINING THE SCENT.

Many flowers, according to the method adopted to extract the perfume, yield more than one scent; it is so with even the same variety of Rose; when distilled it furnishes the well-known Attar, and coming as it does direct from the flowers, one would imagine that it would smell like them, but it does not; it has a very pleasing odor, but certainly not exactly that of the Rose, which is only obtained by the process of *enfleurage* and *maceration*. It is now a well-known fact that fatty substances absorb scents. If we spread very clean grease—say a butter made of a mixture of lard and beef suet—upon a plate, then sprinkle freshly-

gathered scent-yielding flowers upon it and cover the whole with another plate, leaving them thus together for a few hours, the butter will absorb the odorous particles, and become itself fragrant; again, if the butter be melted at as low a heat as possible and flowers be put bodily into it and left there for a time, the grease

also in this way becomes scented; the former is called the *enfleurage* process, the latter the *maceration*. Roses are treated by these joint operations, but some other flowers for practical reasons are worked by one or the other only. In the valley of the Var, Alpes Maritimes, France, an important industry in this direction exists. Farms for the growth of flowers, and vast laboratories for their manipulation are to be found at Grasse, Cannes, and Nice, where Roses are cultivated in a very similar manner to that already described, but they are not allowed to form themselves into hedges, as in Roumelia. During the flowering season the air is laden with fragrance, and women and children gather the blossoms, which they place in little panniers like anglers' baskets hung over the shoulder; they are then carried to the laboratory and weighed, the weighing determining the earnings of the little garners. In the laboratory, anticipating the harvest, great quantities of the butter have been collected, melted, washed and clarified. The success of this process depends on the absolute purity of the grease, and no pains are spared to effect this end, the fat being repeatedly melted with a good bulk of alum, salt, and nitre; then it is washed over and over again with plain water, and Rose and Orange water; finally,

it is again melted with a little gum benzoin. The butter, thus purified, loses all traces of its animal origin; it is odorless as the purest water, but wonderfully ready to absorb fragrance from scent-yielding substances near it. In each laboratory there are several thousand *chassis* (sashes,) or framed glasses, upon which the grease to be scented is spread, and upon these the blossoms are sprinkled or laid; the *chassis en verre* is, in fact, a frame with a glass in it, as nearly as possible like a window-sash, except that the frame is 2 in. thicker, so that when one *chassis* is placed on another there is a space of four inches between every two glasses, thus allowing room for blossoms; each *chassis* or sash is about two feet long and eighteen inches wide. The Roses are changed every day, or every other day, as may be convenient; the same butter remains in the *chassis* for, say, about two-thirds of the time during which the

Roses are in bloom; but each time fresh flowers are put on it is "worked," that is, serrated with a palate knife, so as to present a new surface to the flowers; the butter being inflowered in this way for the given time, is then scraped off the several *chassis* and liquefied in an appropriate vessel placed in a hot water bath. Fresh Roses are then put into the liquefied grease, and there they remain for a few hours; then the butter is carefully strained into a similar vessel, to which fresh flowers are added, and this operation—maceration—is repeated until the end of the Rose season; finally, the butter is again strained and poured into tin canisters.



ROSA DAMASCENA.

When cold, it has a most delightful and natural scent of Roses, and is now fit for exportation to all parts of the world.

Olive oil can be inflowered in a similar way to butter, but in place of glass the frames are filled with coarse wire gauze; these are called *chassis en fer*. Upon the wire net is laid a *molleton*, or very thick cotton fabric resembling the fluffy towel now in use, soaked with fine oil; after continuous changing of the blossoms the *molletons* are folded together and the oil is squeezed out by the aid of a screw press; then this same oil is slightly warmed and charged with fresh flowers for many days, and finally strained; it is then ready for sale. Both the butter and the oil acquire a good color through the pollen of the flowers, but no tint is communicated by the petals.

THE PERFUME.

In order now to obtain the scent of the Rose

in the form used for scenting handkerchiefs, we have to infuse the inflowered butter or oil in strong alcohol, that is, a spirit containing not less than 90 per cent. of absolute alcohol; the solid butter has to be cut up fine or granulated under what may be termed a Macaroni press; it is then put into the spirit and there allowed to remain for several days. If oil be used, it must be shaken up daily with the spirit, the result being that the spirit extracts all the odor from the fatty body and becomes itself "perfume," while the grease on the other hand becomes odorless. As a rule, it requires 5 lbs. of blossoms to inflower 1 lb. of grease, and 8 lbs. of the best of this is used to every gallon of alcohol. The spirit comes away from the butter quite bright, of a pretty pale emerald color. To every gallon of Rose perfume thus made must be added 1 oz. of Roumelia Attar, and in this way the finest Rose scent is obtained. Numerous valuable products are got from the Rosa centifolia and the Rosa damascena, but their manufacture is too technical to be interesting to our readers.

MR. GLADSTONE ON COTTAGE FLOWER SHOWS.—One great merit of these institutions is the encouragement they give in a sober, quiet, unobtrusive way to a most healthful emulation among the people for a description of distinction which does nothing but good to themselves and everybody else. It is most important for us all to be conversant with the works of Providence in Nature. A garden is almost always to a poor man—to a person to whom it is of great importance to economise his means—a source of considerable addition to his bodily comforts and to those of his family. Besides that it is a source of delight to him, and tends to instruct his mind both by information and observation of the most interesting kind, and also by teaching him to turn his mind to the Providence who gives us all the fruits of earth in order to meet our wants. A more healthful pursuit there cannot be conceived—healthful for the body and healthful for the mind.

SYCAMORE.—It is well-known that in England this name is given to a species of Maple, *Acer pseudo-Platanus*, while in this country the Button-wood (*Platanus occidentalis*) is the popular Sycamore. The true Sycamore (*Ficus Sycamorus*.) a native of Egypt and Palestine, has oval, cordate, entire leaves, having no resemblance to either the Plane or the Maple. We have never been able to learn the history of this confusion of names.—*Bulletin Torrey Club.*



THE WAX-PLANT.—THE CINERARIA.

How long must I keep my *Hoya carnosa* before it will bloom? Can I have Cineraries bloom in a living room? I cannot tell how much I am delighted with the MAGAZINE.—M. J. G., *Albion, Iowa.*

Young plants of the *Hoya*, or Wax Plant, will bloom the second season in the hot-house, if well grown, but with ordinary window culture they are often until the third or fourth year before blooming. In its growing season the *Hoya* should have the highest part of the window, in order to have all the heat possible, and it will be extremely grateful for the shade of some other plant, so as not to be exposed to the full and direct rays of the sun; it delights in a humid atmosphere, and the constant evaporation of water in the room should not be neglected. Sponging the leaves, and frequently bedewing them with a fine spray of water will contribute much to their luxuriance, and be a preventive of its particular insect enemy, the Mealy Bug. In the season of rest this plant will bear to be kept rather dry and moderately cool. It is a peculiarity of this plant that the peduncles or stems of the flower-clusters are persistent, or remain on the plant year after year, and bear the clusters of flowers, and, consequently, should never be removed.

The Cineraria will bloom freely in a living room. It is best to raise it from seed sown in May. The young plants should be kept in a healthy, growing condition, in a slightly shaded situation out of doors, during the summer; as they advance in growth re-pot them, and in the fall they will have become strong, stocky plants, ready to be placed in the window. Occasional watering with weak manure water will sustain them in active growth. This plant is quite subject to attacks of the Green-fly, and must be protected from it by frequent fumigations or the use of weak tobacco water. Do not forget to syringe the plants freely with clear water always after fumigation. The Cineraria is seldom seen in house culture, but it is so satisfactory in the abundance and beauty of its flowers that it will well repay all necessary attention.

A REPORT FROM MASSACHUSETTS.

MR. VICK:—The fact that the majority of your correspondents who tell of unusual success in flower culture, are from the West, impels me to send you a few lines about my Callas, just to show what old Massachusetts can do. I will premise that, in out-door gardening, my successes exceed my failures, which, perhaps, is all that could be expected with the soil and climate which almost conquered the Pilgrim Fathers; but in-doors, I keep my plants in an unfinished room, heated by the furnace, and with large, uncurtained windows on the south and west, so that they get an abundance of sun and water, frequent showering being a part of my creed.

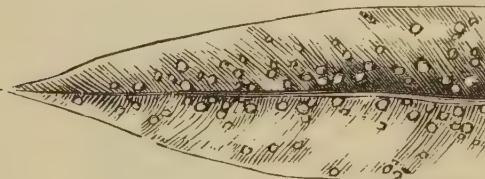
In a wooden tub, 17 inches across and 11 in. deep, I planted, on the first of September, two old Calla roots and fourteen young offshoots, some of the latter being three years old, and all had formerly been grown in large flower-pots, which were kept standing in a deep dish of water. The two old roots are now each 8 in. in circumference at the base. They have separated into six distinct parts, have borne six flowers thus far, with two more buds just forming. The longest leaf-stem measured 36 inches, while the last flower-stalk reached 38 inches. There are thirteen leaves on the two plants, one of which is 19 inches long, two 18½ inches, and several others are 18 inches, while the greatest width of leaf is 10 inches, the average width being 8 inches. The smaller plants are looking well, making an aggregate of seventy-one leaves. They were planted in soil prepared by myself, and I cannot account for the unusual growth, as in previous years, although flowering well, they have only reached the ordinary size for parlor culture here. Perhaps wood is better than earthen pots for such plants; or, is it because the roots have more room? I keep them very wet, of course, and wash the leaves occasionally.—MRS. S. W., *Hingham Centre, Mass.*

You have furnished your plants more food and more room, in fact conditions more suited to their nature, hence the result.

DESTRUCTIVE INSECTS.

MR. VICK:—I have an Oleander tree that is not doing well. It is a large, nice tree, six and three-quarter feet tall, and nearly the same through the top. It has budded several times this winter, but blasted before blossoming. Last spring there was something that came on the leaves that looked like lice. I had them scraped off and washed in soap-suds. It bloomed beautiful all summer, but since it was brought into the house it has not blossomed, and that disease is coming on worse than before. Now, is there anything that can be done to stop them and to get them off? Do you have anything that will cure it, or know of anything that will do so? If so, you will confer a great favor by writing to me; I will pay you for the trouble. I will send you a leaf.—MRS. J. ROGERS, *Leonardsville, N. Y.*

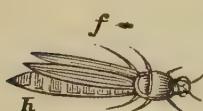
In the last number we described the *Scale Insect* which is so severely injuring the plant of our correspondent, and which almost literally covers the leaf forwarded, somewhat as shown



in the engraving. In answer to other inquiries we also introduce other troublesome insects.

THRIPS.

This is an exceedingly active little insect, and seems to leap rather than fly. The engraving shows a thrip of natural size, *fig. f.*, and the same insect magnified, *fig. h.* These insects are extremely small, and have long, slender bodies, with very narrow wings which are fringed with fine hair. They live on leaves, flowers, in buds, and even in the crevices of the bark of plants, but are so small that they readily escape notice, the largest being not more than one-tenth of an inch in length. The color of the in-



sect varies from a whitish yellow to a dark brown. It attacks the extremities of young shoots and tender leaves, which become brown

THRIP.

and shriveled, and will crumble to dust when rubbed between the thumb and finger.

The same means that have been recommended for the destruction of the "green-fly" serve for this little pest also, but it does not succumb so readily—the fumigation must be more frequently and persistently practiced. As we have said in reference to the "green-fly," so with this insect; it may be prevented to a great extent from multiplying, by syringing and frequently washing the leaves of the plants.

If a viney should be seriously attacked with thrips, wait until all the foliage and fruit are taken off the vines; then remove all kinds of plants that have green leaves into other houses,

and shut up the viney close and fill it with the fumes of sulphur.

RED SPIDER.

The RED SPIDER (*Acarus tellarius*,) is a troublesome little insect, and one which, if allowed to run unchecked, would speedily bring devastation and total ruin to the plants of the house or conservatory; but it is no doubt designed for some beneficial purpose. We can more clearly see the compensating good from its attacks than in the case of most other plant-prey়ers. If it were not for the wholesome fear which it continually inspires, gardeners and other plant-growers would probably very frequently maintain an atmosphere so dry as materially to injure or destroy their plants. If you catch a glimpse of a red spider you may be sure that the atmosphere of your plant-room has been kept too dry—if it is your living-room, it has also been too dry for the health of the man occupants. It will be seen by the engraving that the insect is very minute, as shown by the little dot, *a*; the same, highly magnified, appears at *b*. The body is of a blood-red color, and the feet a light red.

RED SPIDER, (*ACARUS TELLARIUS*.)

A plant upon which this insect has taken up his abode, in a short time shows leaves turning yellow, indicating premature decay—when they are numerous they work webs on the under side of the leaves, and sometimes all over it, until the plant becomes a mass of half dead and decayed leaves.

Water is fatal to the red spider, and as before remarked, with an atmosphere of proper humidity this insect would never get a foot-hold. When once firmly established upon the plants, the speediest way to destroy them is by the fumes of sulphur. This remedy, however, must be used with much caution, as the free use of it will cause most plants to shed their leaves.

Fortunately, but little of it is required; and in the green-houses it has been found sufficient to mix a little flour of sulphur with water, or with milk, which is said to be better, and to paint or smear with it a small surface of the heating pipes or the flue; a very little of it in the atmosphere proves sufficient for the destruction of the insect. In the case of a few house-plants, we think that sponging of the leaves on both sides, and syringing the plants so that the water is thrown on the under as well as upper sides of the leaves, will be effectual without recourse to sulphur.

MEALY BUG.

The MEALY BUG, (*Coccus Adonidum*,) is similar to the Scale Insect, except that it is covered with a white, mealy or downy substance. Both

of them insert their beaks into the bark or leaves, and draw from the cellular substance the sap that nourishes them. A weak mixture of whale oil soap and water in the proportion of one pound of soap to five gallons of water, will be found destructive to them. With a few plants, only, we would recommend the use of a soft brush and water, and in this way they can be easily removed.

SLUGS.

MR. JAMES VICK:—If you know of any remedy for the slug evil, will you not give it to your readers in the first possible number of your MAGAZINE? They have destroyed my borders of Daisies, eaten my Foxgloves into the earth, made fret-work of my Polyanthus leaves and of my temper, and are eating my sweet-breath'd Violets without mercy. I have gone out nights and destroyed them by the quantity, dosed them with carbolic acid as strong as I dared on account of my plants, given them saltpeter baths, sprinkled insect powder and salt on them, and still they grow and multiply, and devastate the earth. In my distress I cry unto you, who are supposed to know all that concerns the health and well-being of plants and flowers. If you know of an exterminator, will you not publish it and receive the thanks of a sorrowing neighborhood?—MRS. F. C., *San Jose, California.*

Hoeing the ground frequently will destroy a great many slugs, and in dry weather this operation is particularly beneficial to the plants. When slugs appear to be multiplying rapidly and doing much mischief, as described by our correspondent, the best means of visiting wholesale destruction upon them, is to dress the ground thoroughly with powdered quick-lime at the rate of four or five hundred pounds to the acre. It should be scattered on evenly over the whole surface, and the best time to do it is in the evening—if possible just after a shower. This operation will destroy a large proportion of the slugs, but some will escape, and it will be necessary to repeat it in a few days, and the result will be their almost total extinction. The amount of lime mentioned—one thousand pounds to the acre—will do no harm, but on most soils be beneficial as a fertilizer.

When the slugs are not very numerous but still do much damage, or when it is not convenient to employ the method described above, they can be trapped by placing about the ground cabbage or lettuce leaves, of which they are very fond, or sliced potatoes or apples; two or three hours after dark these pieces should be examined by the light of a lantern, and those on which the slugs are feeding gathered up and thrown upon the rubbish heap and mixed with quick-lime; or they may be destroyed by throwing them into brine—salt and water—or into lime-water.

Slugs are also fond of fat, and pieces of greased boards are often used as a trap. These are laid about on the ground, and when the slugs have collected upon them they are removed

and destroyed. Barley chaff has been used with excellent results to prevent slugs from passing over on to flower beds, by scattering it around the beds.

Still another method has been successfully employed. Slugs are very fond of bran, and if this is scattered about the garden in small heaps, the next morning with pail, dust-pan and broom it can be gathered up with the slugs it contains, and thrown into brine. This process, repeated from time to time, will destroy a great many slugs and keep them under.

THE CODLING MOTH AND THE CURCULIO.

A letter from Mr. HYATT, of Indiana, to Mr. BARRY, President of the Western New York Horticultural Society, gives the information that Mr. H. and his neighbors had met with success in destroying the Codling Moth and the Curculio by a new device. He says:—

“ We took a piece of pasteboard, some two feet square, and gave it a good coat or two of white paint on each side, and let it dry; then suspended it by two corners with small cords in the tree, and quite late in the evening we took a pot of linseed oil and a paint brush and gave each side a coat of oil, going over all that we have suspended, one to each tree, or one to three or four trees, and leaving them there till morning. In the morning we find the little fellows there, as fast as the gnats in new paint. We leave them to take the sun through the day, and repeat the process of oiling the trap in the evening. By persisting in this practice from the time the moth makes its appearance till it runs its course, we are able to have good crops of apples and plums.”

SPORTING OF THE DAHLIA.—Last year we got the Dahlia Golden Eagle, and as we had not been very successful with them for a few years on account of early frost, we concluded to put them into bottomless kegs, and when our neighbors put their bulbs into the ground we had plants a foot high in the house, which we then put into the garden. The result was that we had the first flowers on the 29th of June, but what was our surprise to find that we had a deep cherry colored one instead of the Golden Eagle. It bloomed till August, and then rested till September, when it gave a straw-colored flower tipped with red—just what we wanted. Can you tell me the reason of this in your MAGAZINE?—A. D., *Pomeroy, O.*

The Fancy Dahlias, that is those that are of two colors (striped, mottled, etc.), are grown from seed produced by a union of Dahlias of different colors, like yellow and purple, and occasionally the children sport back to one or the other of the parents, sometimes having yellow, and at others purple flowers. We have seen yellow, purple, and striped flowers on the same plant, at one time.

BED OF FOLIAGE PLANTS.

Several of our friends have requested us to give the size of the Bed of Foliage Plants illustrated on page 39, February number, with the number of plants, distance apart, etc. The following note from the gardener will give the desired information.

MR. VICK:—My bed of ornamental Leaved Plants, which you did me the honor to illustrate, was about fourteen feet in diameter. The plants were not put in by exact measurement, but were about as follows:—Three *Ricinus* in the center, surrounded by a circle of nine *Cannas* some eighteen inches apart; then a circle of nine *Caladiums* about thirty inches apart. Thirty-two *Acyranthus* or *Coleus*, either will do, for the next circle, and forty *Centaureas* for the outer one. —RICHARD SALTER.

PACKING PLANTS.

Nurserymen and Florists have become so skilled in packing plants for long journeys, that we sometimes think plants could be sent round the world almost without injury. We forwarded a few plants to the wife of the editor of the *Mirror*, of San Francisco, through the mail, and with what success the following will show:

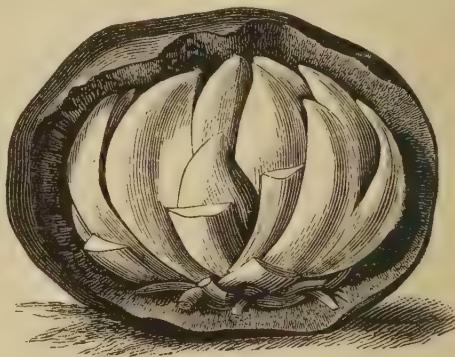
A LONG JOURNEY.—A trip across the continent is not considered very arduous, and is quite a matter of course now-a-days; but it is quite a journey for plants in full bloom to undertake, and come out unscathed at the end. I received a small box from JAMES VICK, Rochester, N. Y., one day last week, containing several plants in full bloom. They were taken from the earth, a small portion being left around their roots, closely packed together in sand, in the box, and put in Uncle Sam's mail-bag, and they now grace my flower-stand with their bloom, looking as fresh as if they had not just landed from a journey of three thousand miles.—*Mirror*.

This success was quite satisfactory, but the following, from southern California, also from a lady editor, is equally so:

DEAR MR. VICK:—My heart was made glad to-day by the arrival of your neat little box of plants and seeds. I was almost afraid to look at the delicate Begonia and other plants, fearing Jack Frost had been there, but they were all right. You certainly have reduced the sending of plants by mail to a science when they can take such a long, cold journey, without being injured in the least. I am the wife of a California editor, one of the fortunate ones who are made happy every year by your generosity to your "brethren of the press." I am very glad you have started the new *MONTHLY*; it has been needed for a long time. The first number lies before me, and is a perfect little gem, so pretty and instructive, and so cheap. I don't see how you can afford to offer it so low, but it is like your generosity. We have always enjoyed your cozy chats in the *FLORAL GUIDE*, and it will be very pleasant to thus hear from you every month. No other florist has done so much to create a love for flowers, and we ladies all give you a vote of thanks. If you were going to run for office, and we could vote, you would find yourself a very popular candidate. I hoped, when you visited California two years since, that you would extend your trip south, and that we might at last have the pleasure of meeting you, but we were disappointed. You would have enjoyed our fine climate and beautiful scenery. Southern California has such a lovely climate, and at many points on the coast, this among others, we have no frost. In the

States I used to sit up late on cold winter nights, to watch my delicate house-plants, but notwithstanding the best of care I would waken mornings to find them blackened and chilled. Here there is not a month in the year that I cannot gather bouquets of the choicest flowers from my garden.—MRS. T. B. S., *San Buenaventura, Cal.*, Feb. 19, 1878.

If we imagine, however, that we possess all the enterprise and skill in the world, or any



special advantages in this direction over our neighbors, we will find ourselves very much mistaken. Considerable difficulty has been experienced in obtaining the *Auratum Lilies* from Japan in a sound, healthy condition, and various systems of packing have been devised and tried, with varying success. Our last importation was strangely prepared. Every bulb was encased in a coating of something like clay and sand, which was well dried before packing, and seemed like the shell of a nut. The engraving shows one of these bulbs with a portion of this shell removed. Every bulb seemed to be perfectly sound. The Japanese must be the "Yankees" of the Pacific. Certainly they are a very ingenious people.

BLEACHING.—Will you or some of your subscribers tell me in your next *MAGAZINE*, how oats and different kinds of grains are made to look so white? I suppose they are bleached in some way, and should like to know how.—F. M. C., *New Haven, Conn.*

The grains, such as wheat, oats, barley, etc., are prepared for ornamental purposes by bleaching in fumes of sulphur,—the same process used by those who bleach straw for hats and other straw work. Indeed the ladies, we think, often have straw bonnets that have become stained and tarnished, re-bleached.

NEW PAPER STOCK.—Experiments have been made in France which show that Cocoanut fibre or husk, is an excellent material for the manufacture of paper. The Cocoanut Palm, though already devoted to more useful purposes, perhaps, than any other tree in the world, it seems is about to have its sphere of usefulness still enlarged. Food, drink, clothes, fans, paper, and what next we cannot say!

A RETROSPECT.

In December, 1851, the *Genesee Farmer*, an excellent paper, then published at Rochester, but long since deceased, contained the following paragraph :

We will furnish to the wife or daughter of every subscriber who may apply for the same, by letter or otherwise, a package of choice annual flower seeds, of from twelve to fifteen varieties.

Now, as the *Farmer* was furnished to subscribers at the low price — low, even for those cheap days — of fifty cents a year, this was, certainly, a most generous offer, and it came from one whose name has since become a household word in thousands of rural homes, and who is known from Maine to Oregon as a doer of bright and fragrant deeds.

As I sat, the other day, turning over the attractive pages of "VICK'S ILLUSTRATED MONTHLY" and the "FLORAL GUIDE," my thoughts involuntarily reverted to those old times, and were soon engaged in sundry reminiscences.

To any one who can look back a quarter of a century, the increase of a love for flowers and their cultivation within that time seems almost marvelous. Twenty-five years ago a "laylock" or two, a red "piney" on either side the front door, a few straggling, untrimmed rose bushes, and, perhaps, half-a-dozen bunches of the old-fashioned yellow Day Lily, constituted the floral adornments of even the most pretentious country homes. But, now, a day's ride through almost any of our rural districts will reveal a succession of bright pictures upon which memory loves to linger. There can be no question that those same packages which, in the beginning of the year 1852, went out from "the flower city" of the Empire State on their beneficent mission to all parts of the land, have had no small share in producing this happy change.

Well do I remember the interest excited by the dozen or more little yellow papers marked, "Balsam," "Aster," "Petunia," &c., which found their way to a certain farm-house not far from the beautiful Cayuga. They were immediately appropriated by a young girl who, just graduated from boarding-school, was, with youthful ignorance and eagerness, beginning to ask herself many perplexing questions as to life and its possibilities for enjoyment and culture, in a secluded, rural neighborhood. The outlook was certainly not very bright for a young dreamer of dreams and builder of air castles, for farm-life is pre-eminently prosaic unless illumined by the light of a little professional enthusiasm, and what girl of seventeen could be expected to have this enthusiasm? To her it seemed simply an endless round of dreary drudgery. But those seeds came just in the

nick of time, and in each tiny globe was hidden a beneficent fairy, whose gentle ministrations were destined to lighten many a weary task, and brighten many a desponding hour.

No far-fetched, wonderful "novelty," or "improved variety," ever afforded keener delight to an experienced florist than did those few old-fashioned flowers to the tyro who planted them, and day by day watched their growth and development. The unfolding of each little bud was a new revelation of beauty, and although the single Petunias, Pinks and Portulacas, and semi-double Balsams, Asters, and Stocks, would now be regarded as very poor specimens of their several kinds, they were then considered marvels of loveliness.

That summer's experience served to solve the problem as to how country life could be made, not only endurable, but delightful, even when, of necessity, the days are full of toil and care. And now, in looking back over the intervening years during which the little bright-hued tokens of a Heavenly Father's love have, each returning summer, been carefully and lovingly cherished, I can but say,—Thank God for flowers, and God bless him who sent that first package of seeds.—FAITH HARPER.

[More than a quarter of a century ago, when publishing the *Genesee Farmer*, which we did not own, but merely managed for a year or two of its prosperity, we thought to do good by presenting the ladies with packages of flower seeds, so we grew some and imported others from the best growers of England, France and Germany, and scattered thousands of these packages all over the land. We knew the sweet influence of those flowers would be felt as long as time endures, but did not know that any one all these long years had remembered either the gift or the giver.]

GROWING THE CALLA.—I have had a Calla two years, but it has not grown much although it looks healthy. When it buds it seems to develop so slowly that the buds blast before maturing. Knowing that many use ammonia in the water for watering Callas, I conceived the idea of applying it directly to the roots by saturating a sponge and placing it in the hole at the bottom of the pot. In less than twenty-four hours I could see an improvement, and I now have a blossom nearly six inches across the top, on a stalk three feet high; and also more leaves and others coming. All this in about three weeks. I apply F. F. F. aqua ammonia about once a week. I have also obtained remarkable results with other plants. Since writing I have learned that my idea is not new; still it may be new to many.—C. C. W., *New Haven, Conn.*

PLAIN TEACHING.

I have read with great pleasure in the January number of your ILLUSTRATED MAGAZINE, the article entitled "Botany for Little Folks." Although I am over sixty years of age, I feel like a little child in regard to the whole circle of sciences. I am very hungry for knowledge, but the writers of books treat me as the crane in the fable did the fox, when she put the soup for dinner in a long necked bottle. She could put her long bill down and get the soup, while the fox could only lick the drops that trickled down the sides. Writers on science take entirely too much for granted as to the intelligence of the common people on scientific subjects, when they use so many technical terms as they do. They might as well write in Sanscrit. I am deeply interested in Geology as one of the most instructive of the sciences, but in the most elementary works I can get, even Prof. Denton's, terms are used which it is impossible for a plain man to understand. I therefore feel discouraged in my endeavors to learn. Yes, I have a more positive feeling; I feel that it is ungenerous and cruel in those who have been more highly favored in the matter of education than the majority of their fellows, to write books on scientific subjects, and couch the knowledge in such terms as effectually exclude the common people from it.

I am not a rich man, except as I am out of debt, but I would cheerfully give twenty dollars in gold for an elementary work on Geology as plainly written as your first chapter in "Botany for Little Folks." Confined as I am to the house during the long winter months, how I would luxuriate in such a work printed in good, large type, suitable for old eyes! I wonder that no such book is prepared, for if the people could only see it, and find that it was comprehensible by them, one might sell as many as he pleased. Every human mind is fond of knowledge, as a healthy body is fond of food. But if an author is ambitious to be considered learned, is stilted in his methods, and cloaks up his subject in unintelligible terms, an ignorant but inquiring mind is confused and discouraged, and if he is like me, he feels like saying hard things of an author who thus tantalizes him.

I hope the chapter on Botany to which I have alluded, is only the first of a series on that beautiful and interesting subject. If so, I shall take my place punctually among the little folks.—AN OLD FARMER.

[We realise the difficulties under which our old friend labors, and indeed all students of the natural sciences who begin late in life, and without the assistance of a teacher, to endeavor

to learn of Nature's beautiful and wonderful laws. No one, we think, can truthfully say that we ever mystified the truth or discouraged the earnest learner. If authors would only learn the beauty of simplicity and the simplicity of beauty, what a blessing it would be. For two numbers we have omitted our lessons in Botany, but have now organized a YOUTH'S DEPARTMENT, in which we shall have a place for a great many pleasant and useful lessons, which we think will interest and profit both young and old. To compensate for previous neglect we give it more space in this number than we shall usually be able to do.]

HORTICULTURE IN CALIFORNIA.

We notice with pleasure the attention given to horticultural pursuits in California, by our former citizens, the Messrs. COOK, of San Francisco. We had the pleasure of meeting these gentlemen when in California, in 1873, and visiting their fine estate at San Rafael, which they are cultivating and improving, not merely as a piece of productive property, but in the best style, according to the most approved methods of modern rural art, as an elegant country residence. The well-known landscape gardener, Mr. WM. WEBSTER, formerly of this city, has been engaged for some time in designing and laying out the grounds.

The rapid growth of trees in California is a subject that has often been remarked, and the instances noted below by Mr. W., in a communication to the *San Francisco Bulletin*, may be implicitly relied upon for accuracy:

An *Araucaria* or Norfolk's Island Pine, which was planted while the improvements were in progress by Thos. Duggan, the gardener, about the middle of May 1875, and which at the time of planting was about 7 feet high, now has attained the height of 15 feet. A *Sequoia gigantea*, or big tree of California, was planted about the same time, then about 3 feet high and 3 inches in diameter, has grown to the height of 11 feet with a circumference of the trunk just above the ground of a little over 29 inches, or 7 inches in diameter. A *Grevillea robusta* planted on the 11th of September 1876, then 18 inches in height, has now attained a growth of 12 feet, with a trunk measuring 11 inches in circumference, and this extraordinary growth has been attained in a period of little more than fifteen months. Some *Eucalyptus globulus*, or Blue Gums, which were planted on the 25th of October, 1876, and at the time of planting ranged in height from two to three feet, to-day, on measuring, I found had attained the height of 25 to 27 feet. One specimen was a trifle over 27 feet with a circumference at the base of 14 inches, with several others, that I did not measure, which appear to be nearly or quite equal in size, with well developed heads, thus making in some instances the most astonishing growth of 24 feet in fourteen months. There is a specimen of the *Eucalyptus globulus*, now standing in the street near the entrance to the ground, which I understand to be about ten years old, which seems to have received but little culture, that to-day has a trunk 5 feet 5 inches in circumference at 18 inches from the ground.

PINKS.—ROSE INSECTS.

MR. VICK:—My Pink roots die through the summer—strong, vigorous plants, in full bloom, dry up and die in a short time. I have lost whole beds in this way, and have never been able to find any worms, or anything, to cause it. I moved my plants last spring to another locality, but it did not make much difference. Have you ever seen anything of the kind among Pink roots, and do you know any remedy? My Rose bushes are troubled with a small, green worm, about half an inch in length, which appears in the month of June, remains three or four weeks, and then disappears. They weaken young bushes very much. I destroy many of them, but cannot get rid of all of them. Would white Heilebore destroy them?—MRS. H. S., *Milledgeville, III.*

The Pink, although a perennial plant, will not remain in full vigor any great length of time; two or three years seems to be the limit of its highest activities, and after that it either dwindles along for a few years, producing but few flowers, or when it has reached its best conditions produces an unusual amount of flowers, and then almost immediately dies off. The remedy consists in frequently renewing the stock by purchase from florists, or by raising new plants from cuttings or division of the roots.

The green worm on the Rose is no doubt the larva of the Rose Saw-fly. HARRIS, the entomologist, says: “They may sometimes be found on the leaves as early as the first of June, but do not usually appear in considerable numbers until the twentieth of the same month. How long they are in coming to maturity, I have not particularly observed; but the period of their existence in the caterpillar state probably does not exceed three weeks. They have a small, round, yellowish head, with a black dot on each side of it, and are provided with twenty-two short legs. The body is green above, paler at the sides, and yellowish beneath; and it is soft, and almost transparent, like jelly. The skin of the back is transversely wrinkled, and covered with minute elevated points; and there are two small, triple-pointed warts on the edge of the first ring, immediately behind the head. These gelatinous and sluggish creatures eat the upper surface of the leaf in large, irregular patches, leaving the veins and the skin beneath untouched; and they are sometimes so thick that not a leaf on the bushes is spared by them, and the whole foliage looks as if it had been scorched by fire, and drops off soon afterward. They cast their skins several times, leaving them extended and fastened on the leaves; after the last moulting they lose their semi-transparent and greenish color, and acquire an opaque yellowish hue. They then leave the rose-bushes, some of them slowly creeping down the stem, and others rolling up and dropping off, especially when the bushes are shaken by the wind. Having reached the ground, they

burrow to the depth of an inch or more in the earth, where each one makes for itself a small oval cell, of grains of earth, cemented with a little gummy silk. Having finished their transformations, and turned to flies, within their cells, they come out of the ground early in August, and lay their eggs for a second brood of young. These, in turn, perform their appointed work of destruction in the autumn; they then go into the ground, make their earthy cells, remain therein throughout the winter, and appear in the winged form, in the following spring and summer.”

Many remedies have been tried for the destruction of this pest, but none have proved so reliable as a mixture of Whale Oil Soap and water, in the proportion of one pound of soap to eight gallons of water. The plants should be syringed with the mixture on the first appearance of the insects in the spring, taking special care to throw the water as well on the under as on the upper sides of the leaves. Repeat the syringing every few days, or whenever there is any indication of the attack of the enemy.

SILVERED LEAVES.—To a friend in England, we are indebted for several specimens of silvered Ferns. These leaves are coated with a silver frosting, and in the night the effect of the silvering must be very fine. The gentleman to whom we are indebted for the specimens writes: “As you are curious in all matters respecting floral decorations, I enclose you Fern leaves that have done duty in the decorations of our church since Christmas Day last. It is an idea of a neighbor of mine, a chemist. All sorts of leaves are coated in the same way, and these mixed with evergreens, Holly-berries and flowers, form very pretty devices, especially at night time. I can tell you the process, which is most simple, if it would be of interest.” Of course we must learn the way: the ladies will like to know.

DAHLIAS.—The Dahlias I planted last spring did splendidly, and were the admiration of all who beheld them. They began to bloom in June. We have about forty varieties, and should I live until another season, I shall add more to them. I think, as you express it in your book, that there is nothing that makes such a rich display in one's garden as a bed of Tulips. I appreciate the interest you take in the cultivation of flowers, and the ever kind instruction you stand ready to impart to all who ask it of you. It has been my delight to cultivate flowers from my earliest childhood, and I have always been very successful.—MRS. N. E. C., *Hooksett, N. H.*

FLOWERING BULBS IN THE HOUSE.

ED. VICK'S MAGAZINE.—I see it frequently stated in floral periodicals that hardy bulbs which have once flowered in the house are useless for the same purpose again until after several years' treatment in the garden. All these notices have been rather ambiguous in their language, and I make bold to trouble you with the direct queries—must all hardy bulbs, such as Hyacinth, Tulip, Narcissus, &c., after being grown in the house in good soil, be subjected to garden treatment for a length of time before being again adapted for house culture, or is it only required in the case of those grown in water, damp moss, &c., without soil? I would not trouble you for myself alone, but I believe the information will be valuable to many of your readers as well as to myself.

—R. C., *La Crosse, Wis.*

It is somewhat difficult to answer some questions directly, and say yes or no. Suppose we were to say to a physician, "I am going into a country where malaria abounds and malarial fever is quite common. Will I take the fever? and if so, will I live or die? I want a direct answer, yes or no." The physician would certainly think we had remarkable faith in his wisdom and foreknowledge, though it might not strengthen his opinion of our own. The growth of bulbs in the house is generally more or less unnatural. If flowered in water, the bulb yields up its substance for the support of the leaves and flowers, without being able to obtain more for the next season; for it must be remembered the bulb hoards up a good store of nutriment one season to support the flowers the next, and to do this well there must be a healthy growth of both roots and leaves, results not often obtained in house culture. The little flower-stem, with its buds, may often be seen formed in the bulb, as described in our January number, page 26. If a bulb is grown in a small pot of earth, in a living room, sometimes surfeited with water and sometimes famished, sometimes roasted and at others chilled, it will not have a very good opportunity to perfect itself and make a good store of vitality and food for the next season's blooming. If, however, the bulb has been well grown under favorable circumstances, there is no reason why it should not flower well in the house for any length of time.

As a general rule, we grow but few flowers in the house, and these with considerable care, and it is a great disappointment when one fails, while, in the garden, the failure of a few plants is not serious. It is not best, therefore, to take any chances, but for house-flowering to secure the best that can be obtained. Again, some bulbs degenerate in this country. The Hyacinth, for instance, is never so good as the first year after its arrival from Holland. After a bulb has become somewhat debilitated by house culture, a season or so in the garden is a good thing, and may cause entire recovery.

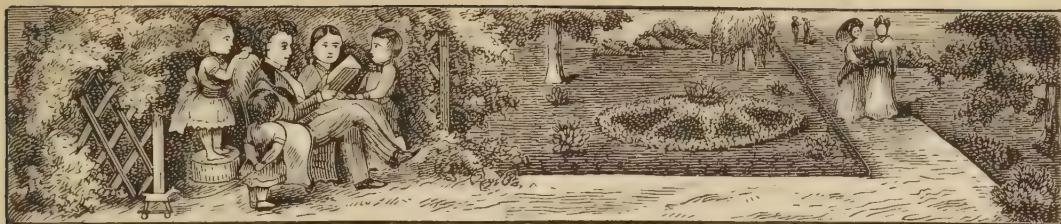
ANNUALS IN OREGON.—It is believed by many of our best gardeners here that Annuals will not prosper in our climate; but after two years experimenting with them, I am convinced they will do nicely. I have had most excellent success keeping house-plants in a dusty, carpeted room, but I have carried a Madeira Vine and an old red Paeony from Illinois to Minnesota, and from there to Oregon, and after five years of patient watching and care have never been rewarded with a single bloom. They are both remarkably thrifty. A goodly number of the plants described in your Catalogues grow wild here. This is a glorious climate to raise flowers in, and I never saw so few cultivated by the common people; my garden was a wonder. I think the culture of flowers would cultivate refinement, — a quality much needed here.—MRS. N. P., *Albany, Oregon.*

NORTHERN SPY APPLES.—A gentleman in Europe, to whom we sent a barrel of very nice *Northern Spy* Apples, speaks of them in this manner:—"I am now very proud to say that what were sound on arrival are as good now as the day you packed them. They have kept wonderfully well this winter. I have now almost thirty left, and am very sparing over them. It is only very particular friends that get a taste. Many people I have given them to think they are too handsome to eat, and keep them to look at. They are much handsomer than our keeping sorts. We have plenty that look as fine, but they are not fit for keeping a day."

INSECTS EATING ASTERS.—I have had splendid Asters for several years, but when they come out in bloom a good sized black bug destroys them for me while in flower, by eating off the top. We could not destroy the insects by picking them off, as they came as fast as we killed them. Please give me a remedy for next summer.—J. K., *Dayton, O.*

[We should be pleased to hear from any of our readers who can give information on this subject. That "black bug" attacked our Asters and Dahlias a good while ago, but we have not seen them in ten years.]

A MILD WINTER AND EARLY SPRING IN ENGLAND.—A private letter from Portsmouth, in the south of England, written February 17th, says:—"We have had a very mild winter. I have seen ice and snow, but the former only about as thick as paper, and the latter only once. To-day has been like summer, with spring flowers all in bloom,—the gardens all alive with Crocus and Snowdrop, Violets, &c., while any one can buy for a cent a bunch of Primroses."



OUR YOUNG PEOPLE.

A MONTH IN THE COUNTRY.

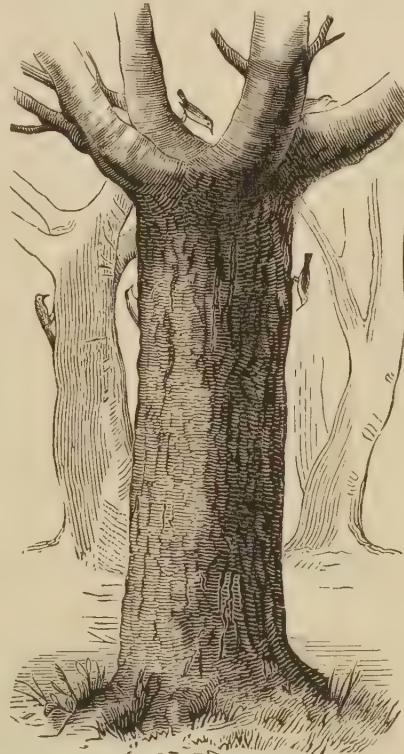
DEAR MR. VICK:—I've been wanting to tell you how I spent my vacation in the country, for do you know, it is one of the nicest things in the world for a city boy to have an uncle in the country, at least so I think; and the mere remembrance of the jolly times I had out at Uncle George's a few years ago, just makes me feel good all over, and I don't expect to forget it for many years to come.

Uncle George was a Methodist preacher, the real, "old style," I've heard ma say. He lived in a—a cottage, called by way of distinction the Parsonage, an old frame house of four rooms and a summer kitchen. The windows were small, and set well up from the floor. There was no verandah, balcony or porch; but then it was intended that some such adornment should be added to the cottage bye-and-bye, and so Uncle George and Auntie were quite contented and happy, and seemed to enjoy the old place just as much as we did our new house in the city.

But if the house seemed small, the barn was uncommonly large—in my eyes. It was a partnership concern, built recently by several of the church members, so that they could run their teams right in there on rainy Sundays when they came to meeting. I think it was a great misfortune for Uncle George to have rainy Sundays, because the good brethren always thought it best to give their teams a little hay or something to chew at during service, and never seemed to remember to fetch any; and besides, those that hadn't teams couldn't come on foot through the mud, and that made the attendance rather small. But I guess Uncle George thought it was all right.

Of course it wasn't *all* sunshine with me, for the second day after I was out there I came pretty near having a spell of sickness. I had just discovered that morning a nice little shanty built on the south side of the barn. It was the henry; and after spending a good half hour inside watching the chickens—some nesting,

some setting, and others cackling and strutting around just like a city dandy, for all the world—I went into the house and soon began to feel dreadful uneasy. My Auntie noticed my distress, and with great sympathy she inquired, "What ails my little Johnny?" "Well, I don't know, Auntie," said I, "but I'm afraid I've got the measles or something, for I feel a tickling all over me." After further inquiry it was decided that I should have a bath, and not make a play-house of the chicken-coop any more. Then another thing that grieved me, was to see such a fine, large orchard with not



NUTHATCHES ON APPLE TREE.

an apple in it; in fact the blossoms were just beginning to show, and Uncle told me it would be three or four months yet before there would be any fruit.

But to offset this I must tell you I had a real nice, airy bed-room—the attic. Yes, sir, right

among all the old traps and stuff, in fact a reg'lar "old curiosity shop," and you ought to have seen me at times (when I was'nt too sleepy) with my midnight oil (kerosene) poring over



DOWNTIE WOODPECKER.

the — the illimitable conglomeration of old books, quaint furniture, pamphlets, manuscripts, and I don't know what all. After the first two or three nights, however, my curiosity-hunting in the attic gave out, for the fresh country air, and rambles through the woods and fields made me so tired by night, I was glad to "lay me down to sleep."

The third morning after my arrival I was up bright and early, and, as usual, went for the orchard to hear the welcome of the Robins, when I discovered a new lot of visitors. "Oh, Uncle George," said I, "look at these cunning little birds out here on the apple-trees; just see how they run up and down and all over, pecking into every crack in the bark and —"

"Yes, my boy," said Uncle George, coming to the door and taking a place beside me, "that is a flock of small Woodpeckers hunting for insects."

"Ha, ha; why Uncle, they aint no Woodpeckers; you won't often see Woodpeckers run *down* a tree, and do such cutting up generally as these little graybacks do; I guess Woodpeckers haven't learned how to stand on their heads yet; Woodpec — there! — there's a Woodpecker on that further tree, in a black and white checkered coat and striped head; that's the Downie,* he is often seen in company with these little fellows. Now watch him slide down that tree—

* *Picus pubescens*.

he comes down by jerks, tail first, dropping a few inches at a time, while his sprightly companions go down a tree head foremost, just as easy as they go up, or around; and then they dress different; there's no Scotch plaid or scarlet about them, like the Woodpeckers, but they are regular quakers, and wear a plain gray coat as you see, and a black cap reaching down to the nape of the neck, with a clean white breast and nether garments. Then observe their manner of conversation, it's a subdued confidential kind of chipping that just makes me ache to be taken into confidence; but now that Woodpecker, heigho, he pipes out loud, he'd just as lief we did know he was having a good time."

"Well," said Uncle George, "I always thought they were all Woodpeckers,—what did you call them, Gray-backs?"

"Oh no, did I? well their proper name is Nuthatch, genus *Sitta*; species *Carolinensis*; so say the books." This last remark I added by way of explanation, for I saw Uncle George looking at me as though he thought I had gone crazy, or something.

"Well, Johnny boy, I dare say you know more about the birds than I do, and now," said Uncle George, "I wonder if you know enough about a horse to take care of old Nelly while I'm gone? I expect Brother Sanders every minute for me; we are going in his conveyance



NUTHATCH.

some nine miles off to attend a funeral, and I do not think we shall be home again before night. What do you think?"

"Oh yes, Uncle George, I can look after Nelly like a book, and —"

"Come then to the barn, and I will show you what to do," said Uncle George, leading the way across the orchard, while I followed after in high glee.

"There, you see," continued Uncle George, "I have filled the rack with hay, all that will be necessary till I come home again. I want you to give Nelly three quarts of oats, so,—and the same quantity at six o'clock."

"But wont she want water, Uncle George?"

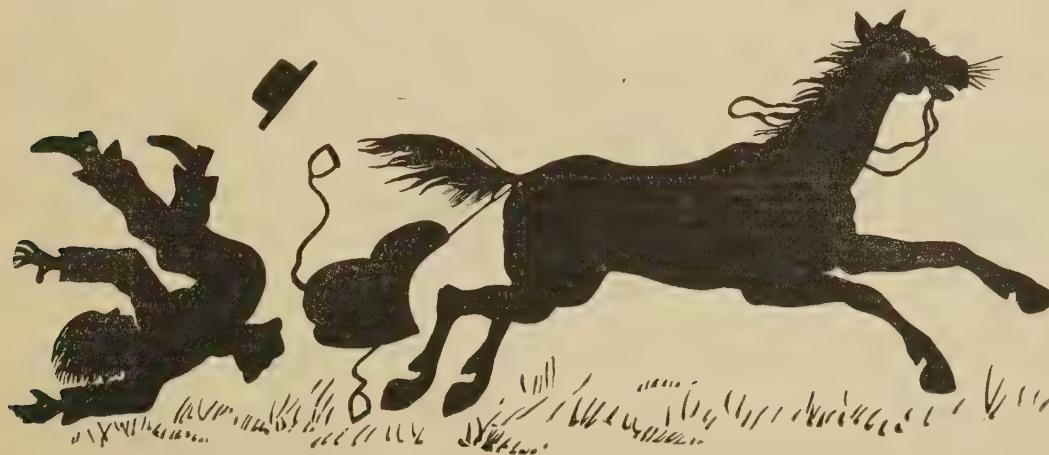
"Oh yes, you may take her to the creek up the road there, about two o'clock, and that will be all, I think."

So ended my instructions, all of which I followed out, and more too. About ten minutes after he took his departure, and I went to the barn, to see if there was'nt something I could do, but as it was still two long hours before twelve, I concluded to slick up the barn some, and put things to rights generally. One of the first objects that got my attention in this general overhauling was an old leather saddle, lying in a corner behind the feed-box—dusty! I just guess it was, and well nigh buried in chaff. After shaking and dusting, I found it to be what I should call a first-rate saddle, with not a scratch nor a tear about it. There was the side-straps with stirrups, and another strap that went out from behind with a loop in it—that of course was for the tail to go in; and now it just occurred to me that Nelly ought to have a drink in the middle of the morning as well as afternoon, and I guess Uncle George forgot that in his hurry, and I dont know, but I ought to attend to it right away, and not keep the poor animal suffering for want of water, when there is so much near by. Accordingly I put on the bridle very nicely, for Uncle George had already shown me how, and then hoisted the saddle on to the old mare's back. Of course I had some little trouble fixing the tail-strap, but when once done, the

saddle came to its place all right, and it did seem to me a very simple thing to do after all. It fitted Nelly's ridgey back like a glove, and my weight, when once in the saddle, would hold it snug; so I led forth the gentle beast to the platform by the side of the little church, took my seat without further trouble, and walked off gently into the street. A few rods to the right we turned down the lane toward the creek, but we had not gone far before we met a young native coming toward us, whittling a switch (isn't it funny that country boys are so fond of whittling sticks?) Now I thought, I'd just show him a little of city style, but the fellow grinned so, do you know, that I called him a country greenhorn—retaliate! I guess he did, by giving Nelly an awful slash. You ought to have seen that old mare streak it. She just snatched herself from under the saddle, and her tail snatched the saddle from under me, and I—well, I think I finished up with a double somersault—no bones broken. Of course it was proper for me to prospect round a little after such a strange manœuvre, and would you believe it, there sat my "greeny" on the rail-fence, whittling the heavy end of his switch and pretending not to see anything. Nelly was a way up the lane, making straight tracks for home, with the saddle still held by the tailstrap,* jingling and crashing about her heels. My hat was waiting for me on the other side of the fence, and as I had nothing more to attend to, I took a short cut across lots for home.

When I got back to the barn, I found Nelly safe in her stall, blowing amazingly; the saddle I picked up outside the barn-door, and quickly buried it in its former oblivion; and as I had not taken Auntie into my confidence in this affair, I did not think it expedient just then to refer to my gymnastic exercises.

*Crupper.



BOTANY FOR LITTLE FOLKS.

In a former article, a general view of vegetation or the Vegetable Kingdom was presented, and in some future articles it is proposed to give a clear account of the manner in which plants are grouped together, by their likenesses, into families or orders, and also to show the principal features of some of the most important families. At present, we wish our young



Simple Leaf.
Fig. 1.



Digitate Leaf.
Horse-chestnut.
Fig. 2.



Rose Leaf, of
five leaflets.
Fig. 3.

thing like the feathers on each side of a quill, and so a leaf that has its veins disposed in this manner is said to be *feather-veined*.

Another kind of venation is the *palmate* or *radiate-veined*, and this may be clearly seen in the leaf of the Pelargonium, fig. 2. The leaf-stem, or *petiole*, instead of passing directly through the leaf, splits up into a number of veins which spread out like rays, or like the fingers when spread open, and are therefore



Obovate Leaf.
Fig. 10.



Lanceolate Leaf.
Fig. 11.



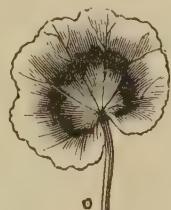
Oblanceolate Leaf.
Fig. 12.

readers to examine with us some of the differences to be noticed in leaves, and to learn the terms used in describing them.

When a leaf, like most leaves, is a single piece, it is said to be *simple*; but if it is divided, or rather, composed of several parts, it is called a *compound leaf*, and the several parts are



Feather-veined
Leaf. Fig. 4.



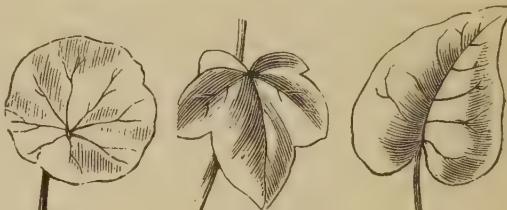
Pelargonium Leaf.
o Petiole. Fig. 5.



Calla Leaf.
Fig. 6.

called *palmate* or *radiate-veined*. This kind of venation is also seen in the leaf of the Horse-chestnut, fig. 2, which is divided into seven parts or leaflets, and the leaf stem divides into seven parts, sending a branch down through the middle of each leaflet.

Now, when it is said that the Horse-chestnut



Oblanceolate Leaf.
Fig. 13.

Leaf with Lobes.
Fig. 14.

Cordate Leaf.
Fig. 15.

called *leaflets*. The Horse-chestnut leaf, fig. 2, is *compound*, and consists of seven *leaflets*. The Rose leaf, shown in fig. 3, is *compound*, and consists of five *leaflets*.

VENATION OF LEAVES.

In the leaf shown in fig. 4, the *petiole*, which is another name for the leaf-stem, passes straight



Nerved Leaves.
Fig. 7.

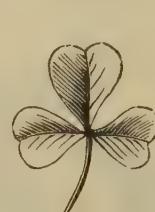


Oval Leaf.
Fig. 8.



Ovate Leaf.
Fig. 9.

leaf, or one similar to it, is *palmate* or *radiate-veined*, the larger veins that start out of the petiole or leaf-stem are referred to—really the mid-ribs of the leaflets, for the leaflets themselves are *feather-veined*. If you should have a doubt, sometime, whether a leaf is *feather-veined* or *palmate-veined*, see if the leaf-stem



Oblanceolate Leaflets.
Fig. 16.



Linear Leaf.
Fig. 17.



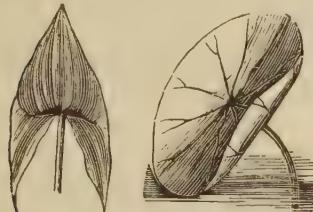
Oblong Leaf.
Fig. 18.

along through the middle of the leaf, and is called the *mid-rib* or *mid-vein*. On each side of the mid-vein smaller veins start and run to the margin of the leaf. These side veins run some-

thing like the feathers on each side of a quill, and so a leaf that has its veins disposed in this manner is said to be *feather-veined*.

sends off regularly, on each side, some branches of about the same size, it is *feather-veined*.

In the parallel-veined leaves there are also two kinds of venation—one similar to the feather-veined, as may be seen in the Calla leaf, *fig. 6*, which has a mid-rib or mid-vein with parallel veins running from it to the margin of the leaf. In the Lily of the Valley leaf, *fig. 7*, it will be seen that the veins run parallel from the base to the apex.



Sagittate Leaf. Peltate, or shield-shaped Leaf. *Fig. 19.* *Fig. 20.*



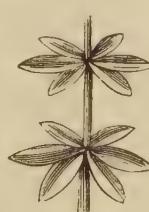
Alternate Leaves. *Fig. 21.*

THE SHAPES OF LEAVES.

The variation in the sizes and shapes of leaves is endless. An *oval* leaf, *fig. 8*, has its sides equally rounded, and is about the same width near each end. An *ovate* leaf, *fig. 9*, resembles an oval leaf, except it is broadest near the base and narrows gradually to a point



Opposite Leaves. *Fig. 22.*



Whorl of Leaves. *Fig. 23.*

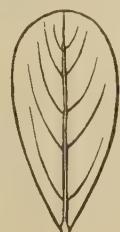


Leaf with auriculate Base. *Fig. 24.*

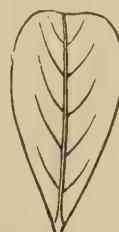
at the opposite end. An *obovate* leaf, *fig. 10*, is shaped like the ovate leaf, but with the narrow end at the base. A *Lanceolate* leaf, *fig. 11*, is long and narrow, broadest at the base, with the sides very gently rounding. An *Oblanceolate* leaf, *fig. 12*, is similar to the lanceolate, except the narrow end is at the base. An *Orbicular*



Hastate Leaf. *Fig. 25.*



Obtuse Leaf. *Fig. 26.*



Retuse Leaf. *Fig. 27.*

leaf, *fig. 13*, is circular in outline or nearly so.

When a leaf has projections or divisions, *fig. 14*, especially of a somewhat rounded form, it is said to be *lobed*. When the base of a leaf

is rounded on each side, like a heart, *fig. 15*, it is called *heart-shaped* or *cordate*. Some leaves, especially leaflets, *fig. 16*, have this heart-shape, not at the base, but at the opposite end, and then they are said to be *obcordate*.

When a leaf is very long and narrow, like a blade of grass, it is called *linear*. When a leaf is two or three times as long as it is broad, and with its sides nearly straight, it is said to be



Obcordate Leaflets. *Oxalis Bowiei.* *Fig. 28.*



Truncate Leaf. *Fig. 29.*

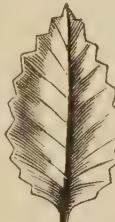


Leaf with Serrate Margin. *Fig. 30.*

oblong. An *Arrow-shaped* or *Sagittate* leaf, *fig. 19*, is one which has long, angular lobes projecting at the base. When a leaf is rounded in form, and has its stem fastened at the center of the back, or nearly so, it is called *peltate* or *shield-shaped*.

THE POSITION OF LEAVES.

Leaves are said to be *alternate*, *fig. 21*, when



Dentate Leaf. *Fig. 31.*



Leaf with Sinuate Margin. *Fig. 32.*



Laciniate or Incised Leaf. *Fig. 33.*

they are situated first on one side and then on another of the stem or branch, but not opposite to each other; they are said to be *opposite* when on opposite sides of the stem or branch, *fig. 22*.

A *sessile* leaf is one that has no petiole or leaf-stalk, but is fixed at its base on the stem or branch, like those in *fig. 22*. A leaf is said to



A Lyrate Leaf of Radish. *Fig. 35.*



Runcinate Leaf of Dandelion. *Fig. 36.*



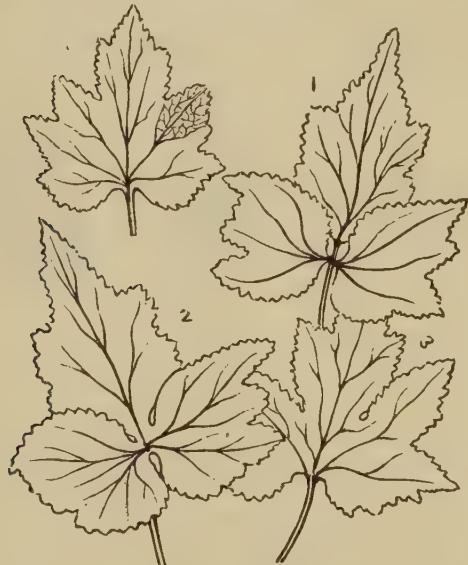
Leaf with a pair of Stipules. *Fig. 37.*

be *radical* when it springs directly out of the crown of the plant at the surface of the ground.

A *whorl* of leaves is a number of leaves arranged in a circle around a stem, *fig. 23*.

THE BASES OF LEAVES.

The bases of leaves take peculiar shapes, such as *Cordate*, *fig. 15*; *Sagittate* or *Arrow-shaped*, *fig. 19*; *Auriculate*, that is with little lobes like ear drops, *fig. 21*; *Hastate* or *Halberd*-shape, when there are two pointed lobes



Leaves of *Anemone Japonica*. *Fig. 34.*

at the base of the leaf, one on each side, standing out at right angles, as may be seen in the leaf of the *Calystegia*, *fig. 22*.

THE APEX OF A LEAF.

The apex of a leaf has a name applied to it according to its particular form. It is said to be *Acuminate* when it is a slender point which is apparently drawn out, as is shown in *fig. 11*. It is *acute* when it is a sharp point, but not so long as the previous one, as shown in *fig. 19*. When it is rounded it is said to be *obtuse*, as in *fig. 26*; but if it is slightly depressed or curved in, it is called *retuse*, as seen in *fig. 27*. If, instead of being merely depressed, it is sharply notched, it is *emarginate*; or if the division extends deeper, as in the leaflets of the *Oxalis*, *fig. 28*, it is called *obcordate*, and when the top of the leaf appears as if cut off, *fig. 29*, it is called *truncate*.

THE MARGINS OF LEAVES

are quite various. When a leaf has sharp teeth pointing forward, like saw teeth, it is said to be *serate*, *fig. 30*. When the teeth point more directly outward they are *dentate*, *fig. 31*; and when rounded they are *crenate*. A wavy margin is *repand*; or, if the depressions run deeper, like *fig. 32*, it is called *sinuate*.

When the edge of a leaf is cut very deep and irregularly, like *fig. 33*, it is said to be *incised*. When a leaf is more regularly cut, and the outlines of the parts more rounded, it is called

lobed, as in *fig. 14*, and like *No. 4*, in *fig. 34*. If the divisions reach the middle of the leaf or a little deeper, as in *No. 3*, *fig. 34*, it is said to be *cleft*; or, if the divisions are still deeper but not reaching the mid-rib, as in *No. 2* of *fig. 34*, it is said to be *parted*; and finally, when the divisions extend quite to the mid-rib, as in *No. 1* of *fig. 34*, the leaf is said to be *divided*. A leaf with a rounded lobe at the top, with smaller ones on each side, and decreasing in size towards the base, is called *lyrate*, *fig. 35*. A leaf cleft as in *fig. 36*, with the divisions running backwards towards the base, is called *runcinate*.

STIPULES.

The leaves of some plants have at the base of the petiole two little, leafy appendages, one on each side, as may be seen in *fig. 37*. These are called *stipules*. Sometimes they look like little narrow leaves, and often they are so small that they will not be noticed unless you look carefully for them; sometimes they adhere by one edge to the side of the stipule, and thus make a sort of wing on each side. In the case of the common Pea the stipule, situate at the base of the compound leaf, is large and leafy, as seen in *fig. 38*, where it appears like a large leaf at the bottom of the pod-stem. Take a look at it the next time you see the Pea vines, and notice how much it is like a leaf and yet how different from the real leaves in shape. There are many various shapes that the stipules take, and which cannot here be described, but, when we examine a leaf, this is one of the first things to observe, for it is a very important mark. Those leaves which have stipules are said to be *stipulate*, and those having none are *exstipulate*; therefore, leaves having petioles are described as *petiolate*, *stipulate*; or *petiolate, exstipulate*.

It will be a pleasant exercise for you to go about the garden and look at the Rose leaves, and the leaves of the Apple and Pear trees, the Raspberry leaves, and the leaves of all the shrubs, and see which have stipules and which have not. In this way you will learn what the stipules are and how to look for them when you see a new plant.

The different characteristics of leaves which



Pea. *Fig. 38.*

have now been noticed are not all that pertain to them, and if you will carefully look at different leaves you will discover some things about them which have not been noticed in this article. You will find, for instance, that there is a great diversity in the shades of color; the surfaces of some leaves are quite smooth, while others are rough to the touch, like sand-paper; some are *silky*, having long, shining hairs; and some are *downy*, being covered with soft, short hairs; some have soft hairs, matted together, and some have the hairs so soft and short that they feel *velvety*. Many other appearances are presented by hairs on the leaves. On some leaves you will notice there are little spines or thorns, or bristles, on the points of the teeth.

You will notice that some leaves are spread out flat and smooth, and that others are more or less wrinkled and curled in different ways. Do you not think it would be pleasant to examine all the different leaves you can find this summer, and press one of each kind, and then fasten them in a blank book which you keep for this purpose? Underneath the leaf you could write the name, and some of you, I know, would like to write on the same page all you can about it, describing it in every particular. The best way to fasten a leaf on the paper is to have some white paper, with gum Arabic or mucilage spread on one side of it, just as it is on the back of a postage-stamp, and then you can cut off little narrow pieces or straps, and fasten them over the leaf. Figure 39 shows the leaf mounted as described.

Fig. 39.



AMERICAN AND ENGLISH CLIMATES.

MR. VICK:—I am an English boy, and learned to love flowers and grow them in my old home, but I find things are different here. I used to be very fond of Scarlet Runners, for the flowers are beautiful, and the beans are good, too, when cut up green, like Snap or French Beans. When some of the white flower beans are planted with the scarlet, the white and scarlet flowers are very pretty together. But here they do not bear many beans, and the flowers do not last as long. My Morning Glories, too, close up by school-time, when in England they would often be open when I came home to dinner, and sometimes at night. Please tell me what is the matter. Then why can't I grow Gooseberries like I used to have? I will sign, not my true name, but what my father calls me sometimes, because I laugh about the *h's*—A LITTLE YANKEE.

The good things are not all found in any one country, but are pretty equally distributed all over the world. Every country and climate has its advantages and disadvantages, and instead of longing for what we cannot get, it is better to enjoy what the country produces to perfection. Our hot summer suns injure the

flowers of the Scarlet Runner sometimes, and prevents the setting of the fruit, though in cool locations and favorable summers there is no difficulty. The same thing causes the Morning Glory to open its flowers and close them very early in the day, unless cool and cloudy. It also causes mildew on the Gooseberries, so that the Gooseberry crop here is one of little consequence, while in England it is a very important one, and the ripe Gooseberries of England are abundant, large and delicious. But then, while our bright, sunny weather is unfavorable to a few things, what delightful Melons and Peaches and Sweet Corn and Tomatoes it gives us; and with how much less care can we grow the Phlox, and Portulaca, and Balsam, and Cockscomb, some of which are almost treated as green-house plants in England, as well as a host of other things that delight in sun and heat. How much the English farmer would give in haying and harvest time if he could trade off some of his foggy, damp days, for a good, bright, Yankee summer day.

OUR YOUTHS' DEPARTMENT.

MR. EDITOR:—I like your MAGAZINE, and the children like it, because they can understand a great deal it contains, the descriptions and instructions are so simple, and the illustrations so interesting and beautiful; but don't you think a Department especially for the Children would be a good thing? There are so many interesting facts and beautiful things in Nature, so attractive and instructive to the young, that I long to have them presented in an attractive form, such as we know would be done in your MAGAZINE should you undertake the work. There would be only one objection in my family, the little ones would claim and monopolize the numbers as they came along; but then that is not serious, for the price is so trifling I would gladly take another copy that the children might call their own. By adopting my suggestion while describing the Children of the Field, you will greatly please and benefit the Flowers of the Family, and your—FRIEND.

We are quite pleased at the suggestion, and indeed anxious to receive and consider any suggestions of our friends and subscribers. Such a department we think can be made both interesting and profitable to all, and therefore will commence at once, though we cannot hope to make it very entertaining for a number or two, and until we have time to prepare both appropriate matter and engravings. We have, however, already several communications from the young folks, as they seem determined to present their claims for a hearing.

FLORAL PRIZES.—We call the attention of our young readers to the offer of prizes, on the next page. We know no reason why the youth should not successfully compete for at least some of these Floral Premiums, at both State and County Fairs.

EARLY SPRING.—At the time of writing, March 8th, everything indicates an early spring. No ice is loitering around our rivers and lakes, and the ground is dry and unusually warm for the season. Soft Maple trees are also in flower. The earliest record we have of the flowering of the Maple previous to this season is March 10, 1871. The prospect for an abundant harvest was never better. It is not best to be in too great haste to plant things that a slight frost will injure or destroy.

PANSIES IN WINTER.—My Pansies have been in bloom nearly all winter. I picked a bouquet from the bed out of doors, under the window, New Years' day. What time must I put the seeds in the ground to have them bloom before fall? — MRS. V. K. C., *Charleston, Ill.*

[Pansies commence flowering when very young. Seed sown any time in the spring will make flowering plants before autumn. Sow the seed in a cool place. The Pansy blooms best in cool, moist weather.]

NYMPHÆA ODORATA.—My pond lily, 'Odorata' (and by the way, the only one in this town,) bloomed during the first week in August. It came out one morning during a shower of rain. Umbrellas were spread, and a dozen visitors surrounded my tub of pond lily in a very short time. Ladies called at all hours of the day and evening, but as the buds close early, the evening visitors were disappointed. The sweet flower was the recipient of calls and adulation enough to satisfy the most ambitious.—J. T., *Waynesburg, Pa.*

DAHLIA CHAS. BACKHOUSE.—A gentleman of Ohio, WM. BAKHAUS, writes,—"The *Chas. Backhouse* Dahlia in your Catalogue is not correctly spelled. It was named after my father, who was an ardent admirer of Dahlias, Tulips and Hyacinths, and spent more money for flowers than for anything else. If the flower is as pure and prolific as he was, I will have lots of good Dahlias next year; but if as poor as I am, I will not have many, and they will not be good for much."

TO OFFICERS OF STATE AGRICULTURAL SOCIETIES.—Please notify us at once if you accept our offer of Premiums for Flowers, and also make arrangements to let the people know of our prizes by publishing them in the papers, and your premium lists. Members should see that officers do their duty in this respect. Much disappointment resulted last season from neglect of this simple matter. Many did not learn of these prizes until they were on the Fair Ground.

VICK'S FLORAL PREMIUMS.

FOR AMATEURS ONLY.

To encourage the culture of Flowers among the people, and particularly among the people who love them and grow them for love alone, I offer \$40.00 in Cash for the **Best Show of Flowers** at each and every State Fair in America.

Officers will please announce this Offer in their Premium Lists, and, if possible, still earlier in the Newspapers, so that all may have an opportunity to prepare for the competition.

I authorize the officers of every State and Territorial Agricultural Society in the United States (and where there are two prominent Societies in one State, both,) and the Provinces of Canada, to offer, in my behalf, the following premiums :

For Best Collection of Cut Flowers,	\$20 00
Second Best "	" . . . 10 00
Third Best "	" . . . 5 00
Fourth Best "	Floral Chromo.

The offer is made to amateurs only, and the flowers to be exhibited at the usual Annual Fairs. The awards to be made by the regular Judges, or by any committee appointed for the purpose. When only one collection is exhibited, the Judges may award the first or any other premium, according to merit, but the exhibition must be a creditable one, and if not so, in the opinion of the Judges, no premium to be awarded. The flowers not to be made up in bouquets, but exhibited separate and named, the object being to award the premiums to the flowers, and not for tasteful arrangement. Also,

For the Best Ornamental Floral Work,

(either Bouquet or Floral Ornament,) . . . \$5 00

I shall not consider the offer accepted by any Society, unless published in the regular Premium List, so that all may have an opportunity to compete. The Officers of Societies will please see that DISINTERESTED and COMPETENT JUDGES are appointed.

We also authorize the Officers of EVERY COUNTY SOCIETY in America to offer one of our FLORAL CHROMOS for best exhibition of Cut Flowers.

We make no conditions regarding where seed is purchased, as many have supposed, but must insist that committees award the prizes fairly to Amateurs, and not to professional Gardeners, or Gardeners at Gentlemen's Establishments.

Officers of Agricultural Societies who accept this offer and give it publicity in the papers and their Premium Lists, will please notify us, and we will publish the fact in our columns. Those from whom we hear nothing we shall consider as having declined to take advantage of our Premiums.



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Lithographic & Chromo Co. of Rochester, N.Y.

SUPERB FEATHERED CELOSIA.